NORTH CAROLINA Medical Journal

Vol. 16 No. 1
January, 1955

IN THIS ISSUE:

THE GOLDEN AGE OF MEDICINE — DAVISON

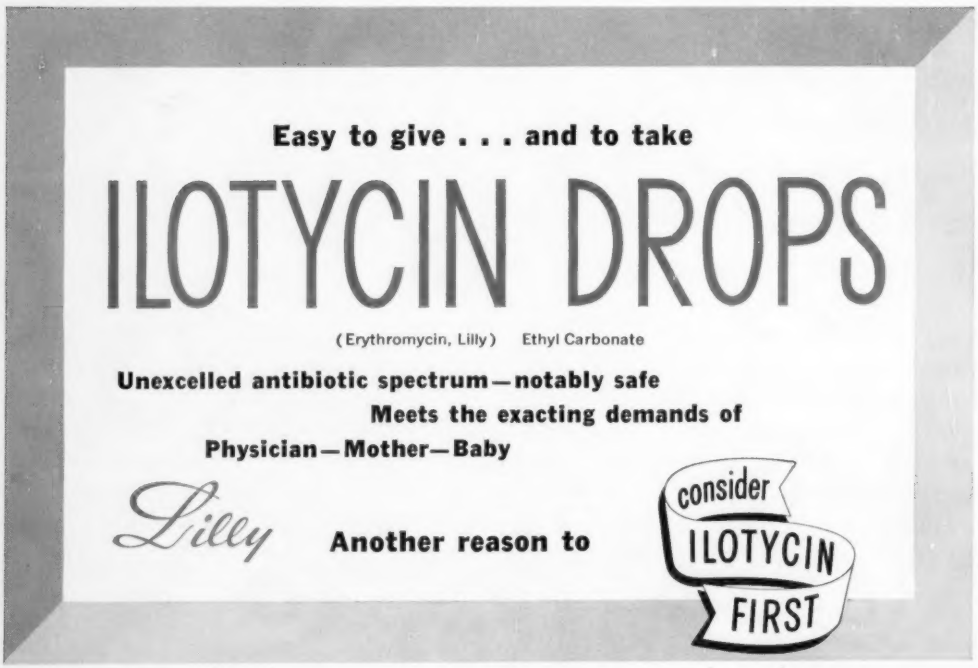
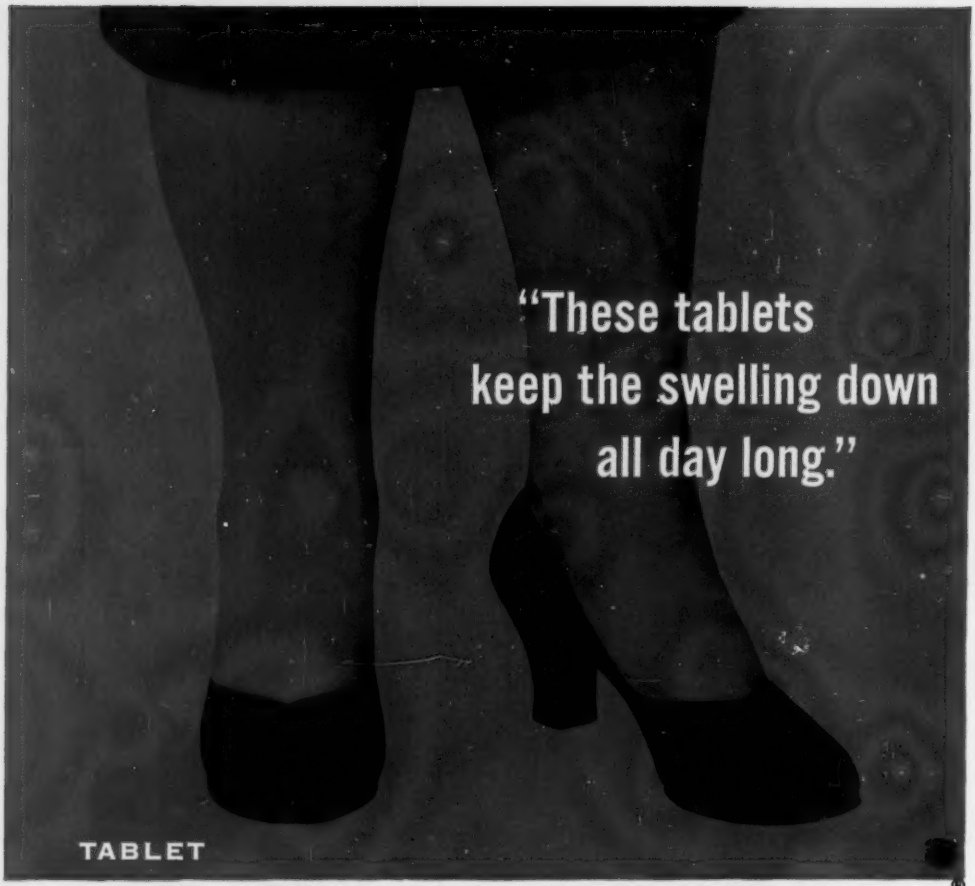


Table of Contents, Page II



NEOHYDRIN®

BRAND OF CHLORMERODRIN

NORMAL OUTPUT OF SODIUM AND WATER

Individualized daily dosage of NEOHYDRIN -- 1 to 6 tablets a day as needed -- prevents the recurrent daily sodium and water reaccumulation which may occur with single-dose diuretics. Arbitrary limitation of dosage or rest periods to forestall refractivity are unnecessary. Therapy with NEOHYDRIN need never be interrupted or delayed for therapeutic reasons. Because it curbs sodium retention by inhibiting succinic dehydrogenase in the kidney only, NEOHYDRIN does not cause side actions due to widespread enzyme inhibition in other organs.

Prescribe NEOHYDRIN in bottles of 50 tablets. There are 18.3 mg. of 3-chloromercuri-2-methoxypropylurea in each tablet.

Leadership in diuretic research

LAKESIDE LABORATORIES, INC · MILWAUKEE 1, WISCONSIN

THE PINEBLUFF SANITARIUM

PINEBLUFF • NORTH CAROLINA

A Sanitarium for Rest Under Medical Supervision, and Treatment of Nervous and Mental Diseases, Alcoholism and Drug Addiction.

The Pinebluff Sanitarium is situated in the sandhills of North Carolina in a 60-acre park of long pines. It is located on U. S. Route 1, six miles south of Pinehurst and Southern Pines. This section is unexcelled for its healthful climate.

Ample facilities are afforded for recreational and occupational therapy, particularly out-of-doors.

Special stress is laid on psychotherapy. An effort is made to help the patient arrive at an understanding of his life problems; and by adjustment to his personality difficulties or modification of personality traits to effect a cure or improvement in the disease. Two resident physicians and a limited number of patients afford individual treatment in each case.

For further information write:

The Pinebluff Sanitarium, Pinebluff, N. C.

Malcolm D. Kemp, M.D. Medical Director

BURDICK ULTRAVIOLET LAMPS

FOR THE SPECIALIST AND G. P.

A modern, efficient ultraviolet lamp is a real asset in the progressive practice.

PRICE $165.00

WE SERVICE WHAT WE SELL

The physiologic and therapeutic properties of ultraviolet have been established by years of research and clinical use. Briefly, these actions may be summarized:

Skin Diseases. Ultraviolet has a specific effect on lupus vulgaris, and is often beneficial in psoriasis, erysipelas, eczema, indolent ulcers, furunculosis, acne, pityriasis rosea, and a number of others. Proper selection of cases is important.

In rickets prevention, prenatal irradiation of the mother and of the nursing mother (entire body) is specific.

Tuberculosis of the bones, joints, peritoneum, intestines, larynx and lymph nodes, and tuberculous sinuses are benefited by general body irradiation.

Sluggish, indolent wounds which do not heal readily may be improved by local ultraviolet irradiation.

In secondary anemia, ultraviolet used adjunctively may possibly prove valuable.

Vitamin D formation results from exposure to ultraviolet.

Calcium and phosphorus metabolism is favorably influenced, prophylactically and therapeutically, in rickets, infantile tetany and spasmophilia.

WINCHESTER

"CAROLINAS' HOUSE OF SERVICE"

Winchester Surgical Supply Co.
119 East 7th St. Charlotte, N. C.

Winchester-Ritch Surgical Co.
421 West Smith St. Greensboro, N. C.

NORTH CAROLINA MEDICAL JOURNAL

Official Organ of

THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

VOLUME 16
NUMBER 1

JANUARY, 1955

50 CENTS A COPY
$5.00 A YEAR

CONTENTS

ORIGINAL ARTICLES

The Golden Age of Medicine—Wilburt C. Davison, M.D. 1

Infantile Cortical Hyperostosis—James B. Sidbury, Jr., M.D., and J. Buren Sidbury, M.D. 3

Acute Infantile Hemiplegia—Alanson Hinman, M.D. 5

Hydatidiform Mole and Toxemia of Pregnancy —James A. Crowell, M.D. 11

Obstetric Analgesia and Anesthesia—Richard L. Pearse, M.D., Eleanor B. Easley, M.D., and Kenneth A. Podger, M.D. 18

The Interrelationships Between Psychic and Physical Factors in the Production of Mental Illness in the Aged—Robert H. Barnes, M.D., Ewald W. Busse, M.D., and Albert J. Silverman, M.D. 25

The Physician's Role in Preventive Psychiatry —Roger William Howell, M.D. 28

EDITORIALS

A Spiritual Rebirth Urged 31

Need for Public Understanding of Drug Prices 31

Should State Taxes Be Lowered? 32

New Year Resolutions 32

BULLETIN BOARD

Coming Meetings 33

North Carolina Board of Medical Examiners . 33

News Notes from the Duke University School of Medicine 33

Conference on Rural Health 33

Fourth Annual Cancer Symposium 33

North Carolina March of Dimes Against Polio 33

County Societies 33

News Notes 33

Announcements 34

THE MONTH IN WASHINGTON

36

BOOK REVIEWS

37

CLASSIFIED ADVERTISEMENTS

37

INDEX TO ADVERTISERS

XLIII

Entered as second-class matter January 2, 1940, at the Post Office at Winston-Salem, North Carolnia, under the Act of August 24, 1912. Copyright 1955 by the Medical Society of the State of North Carolina.

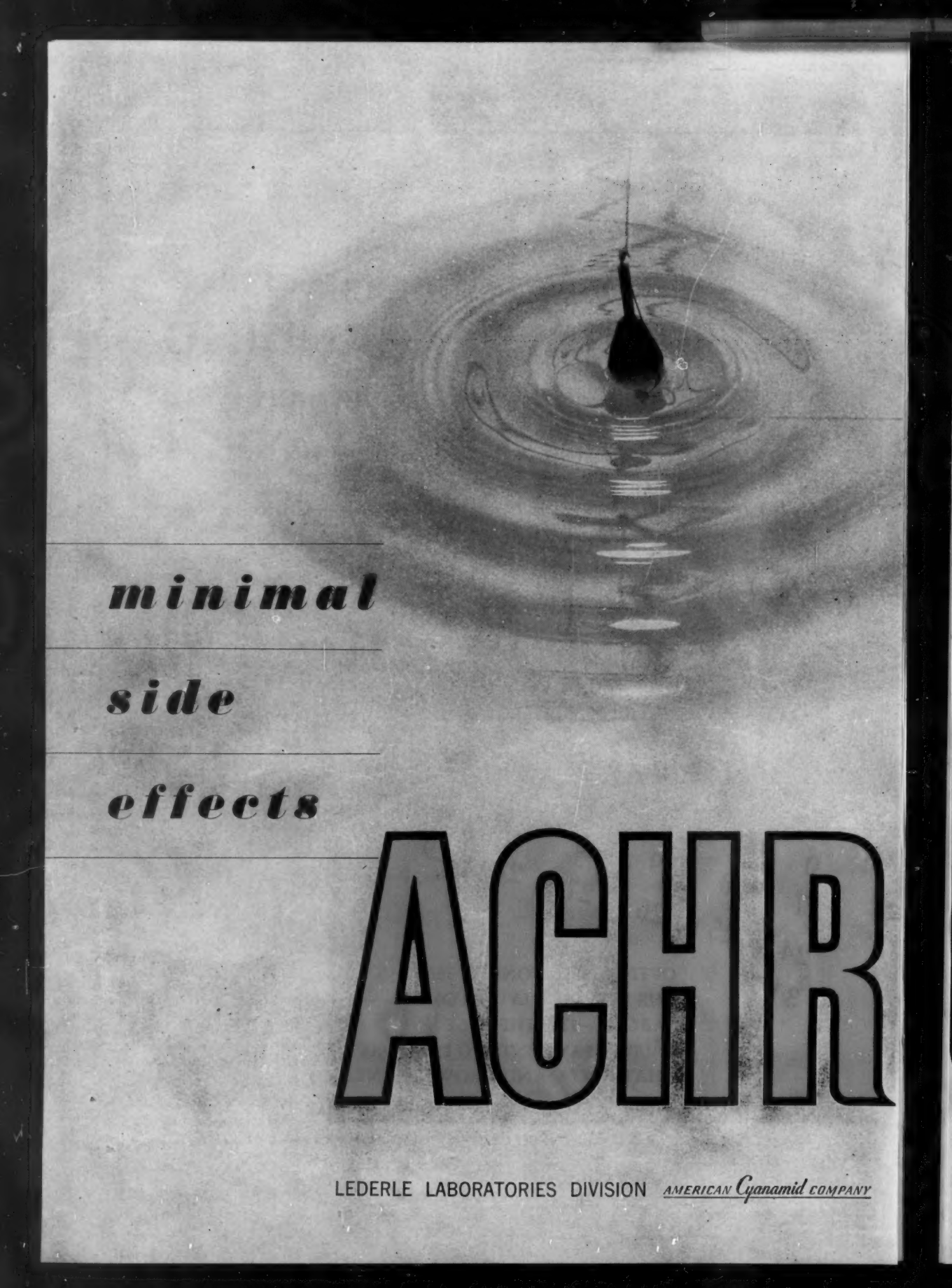
THE CASE OF THE

EXPANDING

JANUARY

OPTICAL ILLUSION! IT ISN'T THE MONTH THAT BECOMES LARGER—IT'S THE BLUE SHIELD® PAYMENTS TO DOCTORS THAT GROW AND GROW, THANKS TO

HOSPITAL SAVING ASSOCIATION • CHAPEL HILL


minimal
side
effects
ACHR
LEDERLE LABORATORIES DIVISION
AMERICAN Cyanamid COMPANY

One of the notable qualities of ACHROMYCIN, the Lederle brand of Tetracycline, is its advantage of minimal side effects. Furthermore, this true broad-spectrum antibiotic is well-tolerated by all age groups.

In each of its various dosage forms, ACHROMYCIN provides more rapid diffusion for prompt control of infection. In solution, it is more soluble and more stable than certain other antibiotics.

ACHROMYCIN has proved effective against a wide variety of infections caused by gram-positive and gram-negative bacteria, rickettsia, and certain virus-like and protozoan organisms.

ACHROMYCIN ranks with the truly great therapeutic agents.

OMYCIN*

HYDROCHLORIDE
Tetracycline HCl Lederle

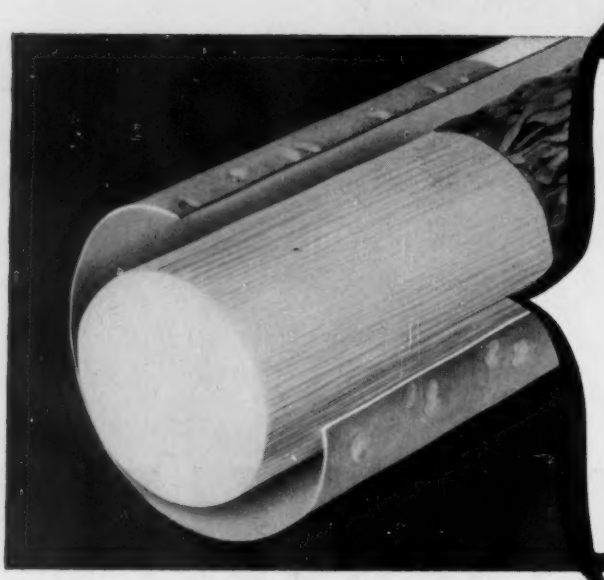
Pearl River, New York

Lederle®

®REG. U.S. PAT. OFF.

DOCTOR, WHEN YOUR PATIENTS ASK...

What have VICEROYS got that other filter tip cigarettes haven't got?



The Answer Is

20,000 FILTERS

in Every Viceroy Tip

Only Viceroy has this new-type filter. Made of a non-mineral cellulose acetate—it gives the greatest filtering action possible without impairing flavor or impeding the flow of smoke.

Smoke is also filtered through Viceroy's king-size length of rich, costly tobaccos. Thus, Viceroy smokers get *double the filtering action* . . . for only a penny or two more than brands without filters.

WORLD'S LARGEST-SELLING FILTER TIP CIGARETTE

New King-Size

Filter Tip VICEROY

ONLY A PENNY OR TWO MORE THAN CIGARETTES WITHOUT FILTERS

ELECTRON PHOTOMICROGRAPH

Klebsiella pneumoniae 39,000 X

Klebsiella pneumoniae (Friedländer's bacillus) is a Gram-negative, capsulated organism commonly involved in various pathologic conditions of the nose and accessory sinuses, in addition to bronchopneumonia and bronchiectasis.

It is another of the more than 30 organisms susceptible to

PANMYCIN*

100 mg. and 250 mg. capsules

Upjohn

*TRADEMARK, REG. U. S. PAT. OFF.

Medical Society of the State of North Carolina

OFFICERS 1954-1955

President—ZACK D. OWENS, M.D., Elizabeth City
President-Elect—JAMES P. ROUSSEAU, M.D., Winston-Salem
First Vice President—GEORGE W. PASCHAL, JR., M.D., Raleigh
Second Vice President—ELIAS S. FAISON, M.D., Charlotte
Secretary-Treasurer—MILLARD D. HILL, M.D., Raleigh
Executive Secretary—MR. JAMES T. BARNES, 203 Capital Club Building, Raleigh

The President, Secretary-Treasurer, and Executive Secretary are members **ex-officio** of all committees.

COUNCILORS 1952-1955

First District—T. P. BRINN, M.D., Hertford
VICE COUNCILOR—Q. E. COOKE, M.D., Murfreesboro
Second District—JAMES S. RHODES, JR., M.D., Williamston
VICE COUNCILOR—J. C. PEELE, M.D., Kinston
Third District—DONALD B. KOONCE, M.D., Wilmington
VICE COUNCILOR—AMOS N. JOHNSON, M.D., Garland
Fourth District—JAMES GROVER RABY, M.D., Tarboro
VICE COUNCILOR—ROBERT M. WHITLEY, JR., M.D., Rocky Mount
Fifth District—JOSEPH S. HIATT, JR., M.D., Southern Pines
VICE COUNCILOR—ROBERT M. MCMILLAN, M.D., Southern Pines
Sixth District—ARTHUR H. LONDON, JR., M.D., Durham
VICE COUNCILOR—CLARENCE E. GARDNER, M.D., Durham
Seventh District—JOHN W. ORMAND, M.D., Monroe
VICE COUNCILOR—LESLIE M. MORRIS, M.D., Gastonia
Eighth District—O. NORRIS SMITH, M.D., Greensboro
VICE COUNCILOR—HARRY L. BROCKMANN, M.D., High Point
Ninth District—JOHN C. REECE, M.D., Morganton
VICE COUNCILOR—JACOB H. SHUFORD, M.D., Hickory
Tenth District—WILLIAM A. SAMS, M.D., Marshall
VICE COUNCILOR—BURNICE E. MORGAN, M.D., Asheville

Speaker of House of Delegates—G. WESTBROOK MURPHY, M.D., Asheville
Vice Speaker of House of Delegates—LENOX D. BAKER, M.D., Durham

The above-named officers, councilors, and speakers constitute the Executive Council of the Society which has interim authority over the affairs of the Society between annual meetings of the House of Delegates.

SECTION CHAIRMEN—1954-1955

General Practice of Medicine and Surgery—ERNEST W. FURGURSON, M.D., Plymouth
Practice of Medicine—OSCAR L. MCFAYDEN, JR., M.D., Fayetteville
Ophthalmology and Otolaryngology—ALAN DAVIDSON, M.D., New Bern
Surgery—R. W. POSTLETHWAIT, M.D., Kinston
Pediatrics—JEAN C. MCALLISTER, M.D., Greensboro
Gynecology and Obstetrics—JOHN KERNODLE, M.D., Burlington
Public Health and Education—M. T. FOSTER, M.D., Fayetteville
Neurology and Psychiatry—DAVID A. YOUNG, M.D., Raleigh
Radiology—ERNEST WOOD, M.D., Chapel Hill
Pathology—R. P. MOREHEAD, M.D., Winston-Salem
Anesthesia—RICHARD SPENCER, M.D., Greensboro

To ease the blow when you say..."No Salt!"....

— gives a zestful "salty" flavor to the sodium-restricted diet — helps to keep the patient on the salt-free regimen by making meals tasty.

Neocurtasal may be used wherever sodium restriction is indicated — it is completely sodium-free. May be used like ordinary table salt — added to foods during or before cooking or used to season foods at the table.

WINTHROP

Neocurtasal

"... trustworthy non-sodium containing salt substitute"[1]

Write for pad of diet sheets.

Supplied in 2 oz. shakers and 8 oz. bottles.

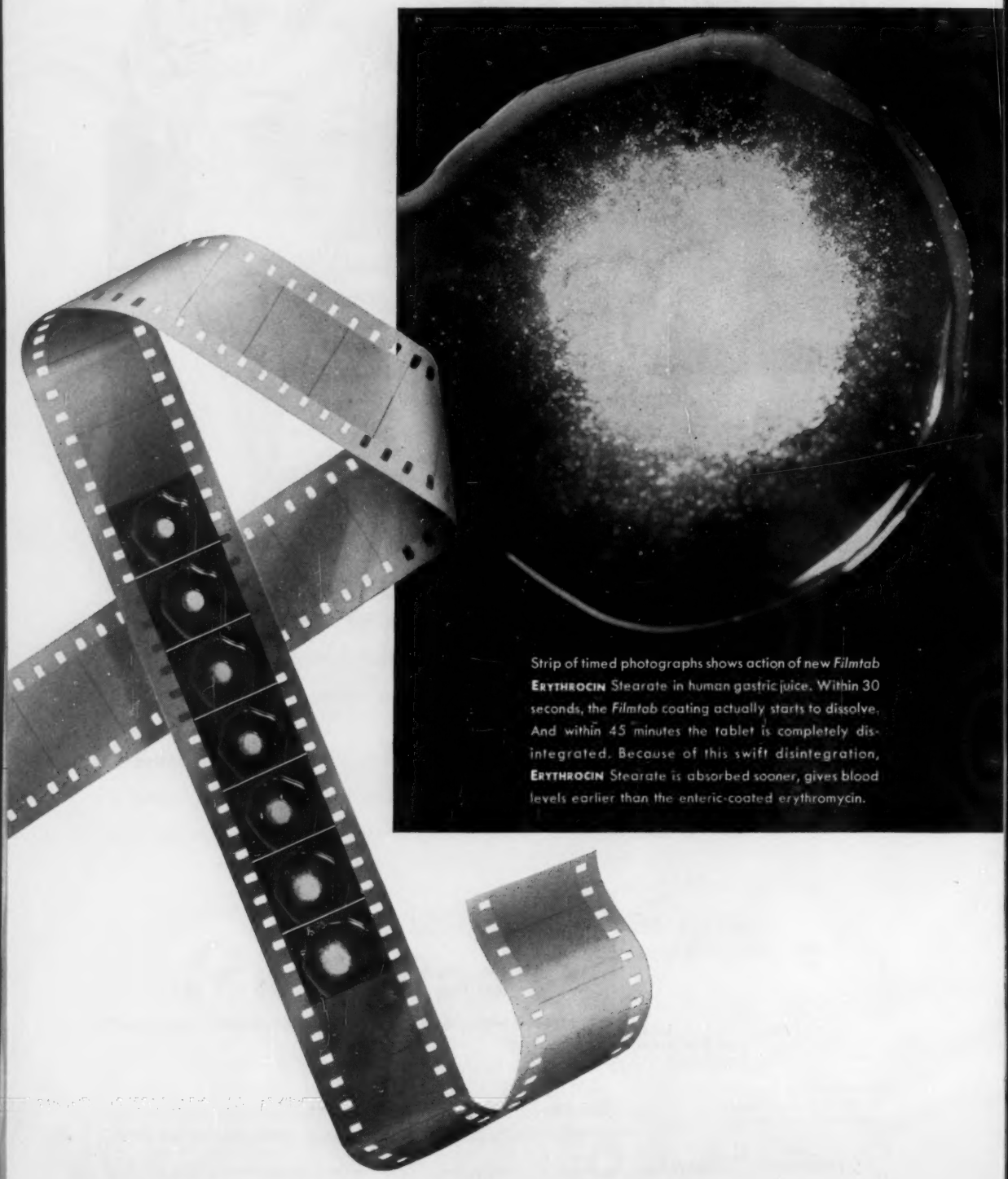
1. Heller, E. M.: The Treatment of Essential Hypertension. *Canad. Med. Assn. Jour.*, 61:293, Sept., 1949.

CONSTITUENTS: Potassium chloride, ammonium chloride, potassium formate, calcium formate, magnesium citrate, potassium iodide (0.01%) and starch.

Winthrop-Stearns INC. NEW YORK 18, N. Y. WINDSOR, ONT.

Neocurtasal, trademark reg. U. S. Pat. Off.

because the new coating dissolves this fast...



Strip of timed photographs shows action of new *Filmtab* **ERYTHROCIN** Stearate in human gastric juice. Within 30 seconds, the *Filmtab* coating actually starts to dissolve. And within 45 minutes the tablet is completely disintegrated. Because of this swift disintegration, **ERYTHROCIN** Stearate is absorbed sooner, gives blood levels earlier than the enteric-coated erythromycin.

your patients get high blood levels in 2 hours or less

filmtab* **Erythrocin®** STEARATE

(ERYTHROMYCIN STEARATE, ABBOTT)

disintegrates faster than enteric-coated erythromycin

filmtab*

Erythrocin . . . *for faster absorption*

New tissue-thin *Filmtab* coating (marketed only by Abbott) starts to disintegrate within 30 seconds—makes ERYTHROCIN Stearate available for immediate absorption. Tests show Stearate form definitely protects drug from stomach acids.

filmtab*

Erythrocin . . . *for earlier blood levels*

because there's no delay from an enteric coating, patients get high, inhibitory blood levels of ERYTHROCIN *in less than 2 hours*—instead of 4-6 as before. Peak concentration is reached at 4 hours, with significant levels for 8 hours.

filmtab*

Erythrocin . . . *for your patients*

Filmtab ERYTHROCIN Stearate is highly effective against coccic infections . . . and especially useful when the infecting coccus is resistant to other antibiotics. Low in toxicity—*it's less likely to alter normal intestinal flora than most other oral antibiotics.* Conveniently sized (100 and 200 mg.) in bottles of 25 and 100. Abbott

**TM for Abbott's film sealed tablets, pat. applied for.*

231

Thank you doctor
for telling mother about...

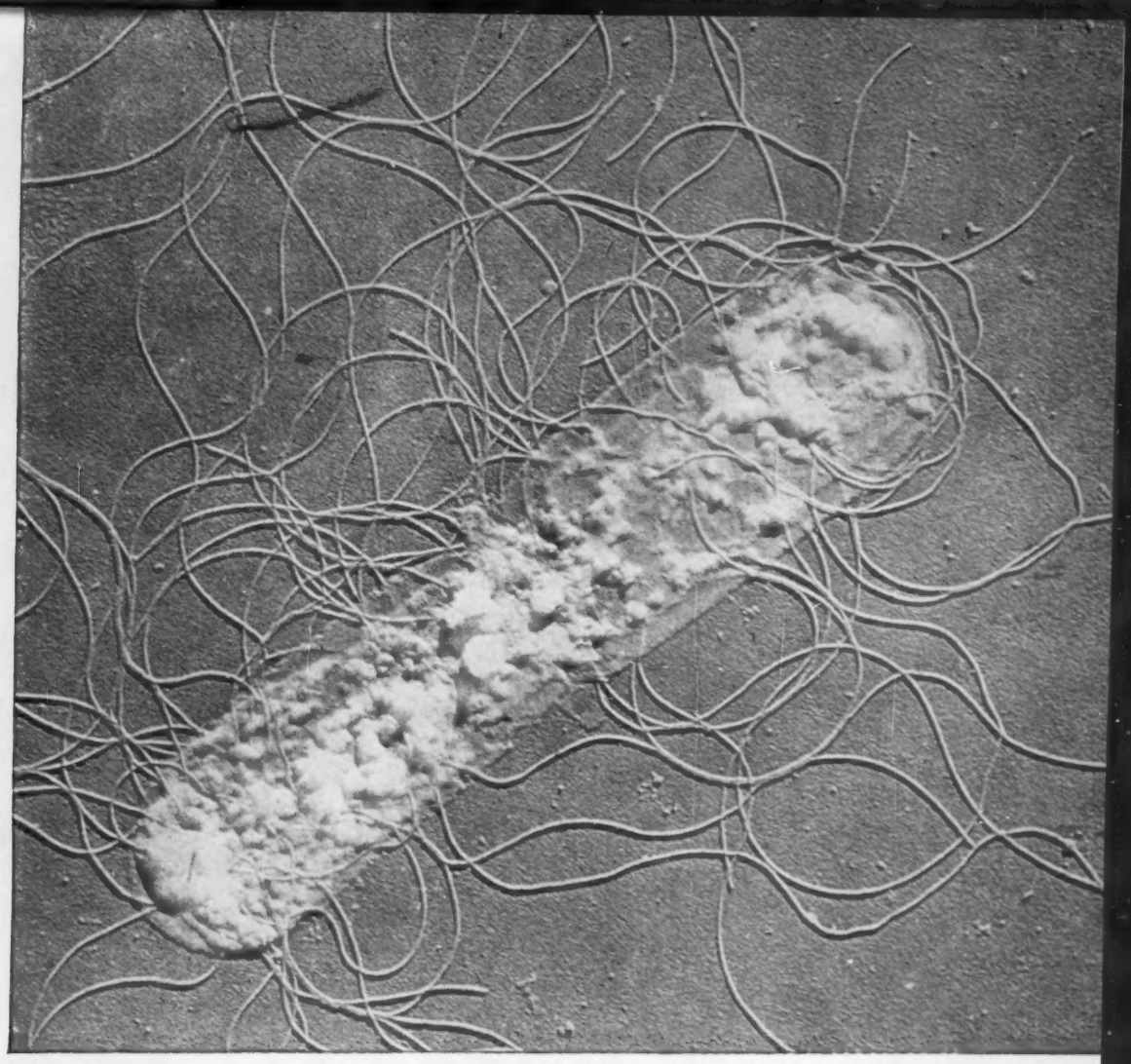
The Best Tasting Aspirin you can prescribe

The Flavor Remains Stable down to the last tablet

Bottle of 24 tablets 15¢ (2½ grs. each)

We will be pleased to send samples on request

THE BAYER COMPANY DIVISION of Sterling Drug Inc., 1450 Broadway, New York 18, N.Y.



ELECTRON PHOTOMICROGRAPH COURTESY R.C.A. LABORATORIES

Proteus vulgaris 29,000 X

Proteus vulgaris is a Gram-negative organism commonly involved in

urinary tract infections • septicemia

peritonitis following low perforation of the gut.

It is another of the more than 30 organisms susceptible to

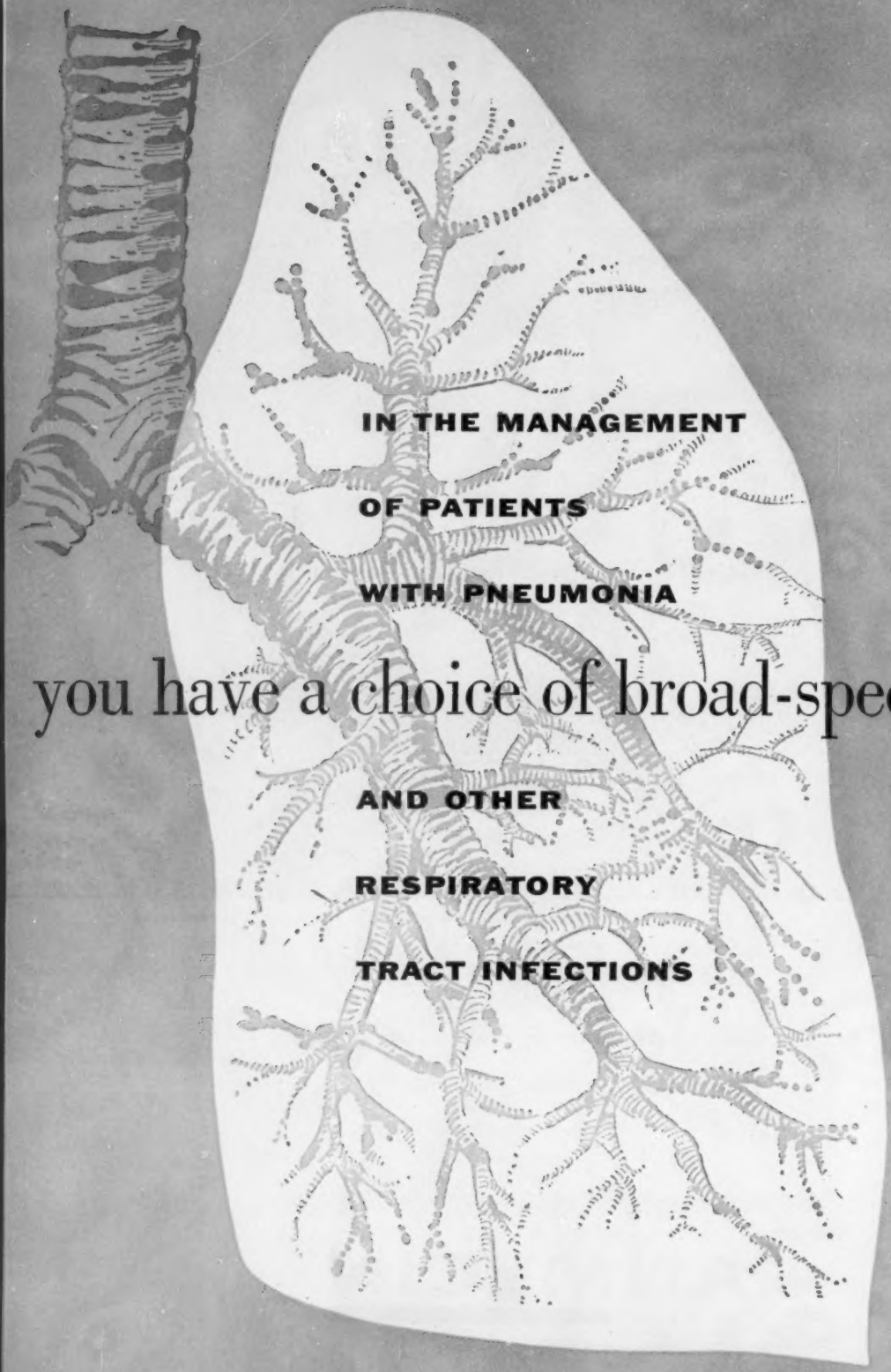
PANMYCIN*

TETRACYCLINE HYDROCHLORIDE

100 mg. and 250 mg. capsules

*TRADEMARK, REG. U. S. PAT. OFF.

Upjohn



IN THE MANAGEMENT

OF PATIENTS

WITH PNEUMONIA

you have a choice of broad-spectrum

AND OTHER

RESPIRATORY

TRACT INFECTIONS

established by successful use for more than four years in the treatment of pneumonias and other respiratory tract infections due to susceptible organisms:

TERRAMYCIN®

BRAND OF OXYTETRACYCLINE

"The response [of pneumococcal and mixed bacterial pneumonias in which pneumococcus, Staph. aureus hemolyticus, H. influenzae, E. coli and A. aerogenes were isolated from sputum or pharyngeal secretions] was excellent as manifested by improvement of clinical appearance and fall of temperature to normal" within 24 to 48 hours. "A remarkably high number of infants and young children tolerated this drug very well."[1]

antibiotics discovered by *Pfizer*

newest of the broad-spectrum antibiotics for the treatment of the pneumonias and other respiratory tract infections due to susceptible organisms:

TETRACYN®

BRAND OF TETRACYCLINE

"The clinical results in...bacterial pneumonia were generally quite satisfactory" even though most of the patients were over 60 years of age. "Many had serious concomitant diseases such as severe chronic alcoholism, pulmonary emphysema" and other debilitating conditions. "Marked symptomatic improvement occurred in the first 2 or 3 days of therapy with decrease in cough and sputum volume and return of appetite and general sense of well-being."[2]

1. *O'Regan, C., and Schwarzer, S.: J. Pediat. 44:172 (Feb.) 1954.*
2. *Waddington, W. S.; Bergy, G. G.; Nielsen, R. L., and Kirby, W. M. M.: Am. J. M. Sc. 228:164 (Aug.) 1954.*

Pfizer

PFIZER LABORATORIES, *Brooklyn 6, N.Y.*
Division, Chas. Pfizer & Co., Inc.

DIGITALIS

in its completeness

Each pill is
equivalent to
one USP Digitalis Unit

Physiologically Standardized
therefore always dependable.

Clinical samples sent to physicians upon request.

Davies, Rose & Company, Limited
Boston 18, Mass.

Thoroughbred In Its Field

Audivox, successor to Western Electric Hearing Aid Division, brings the boon of better hearing to thousands.

These are the Audivox Hearing Aid Dealers who serve you in North Carolina. Audivox dealers are chosen for their competence and their interest in your patients' hearing problems.

Hearing is their business!

ASHEVILLE
Audiphone Company of Asheville
106 Miles Building
2 Wall Street

CHARLOTTE
Carl Baldwin
1403 Independence Building

DURHAM
Maurlee Audiphone and Electric Company
703 East Main Street
Tel: 5-8921

GREENVILLE
Bland's Hearing Aid Sales and Service
401 State Bank Building
Tel: Dial 4330

WINSTON-SALEM
John H. Wadsworth
634 Nissen Building
Tel: 7072

FLORENCE, SOUTH CAROLINA
Florence Hearing Center
165 South Irby Street
Tel: 8395

JOHNSON CITY, TENNESSEE
P. L. Gregory and Associates
134 West Market Street
Tel: 3512

KNOXVILLE, TENNESSEE
Tennessee Hearing Service
610 Walnut Street
Tel: 4-8530

NORFOLK, VIRGINIA
Keech Hearing Service
609 Royster Building
Tel: Norfolk 5-4425

audivox
TRADE-MARK
SUCCESSOR TO
Western Electric
HEARING AID DIVISION

thoroughbred

Only a long and celebrated ancestry can produce a champion racing thoroughbred.

Only **audivox** in the hearing-aid field can trace an ancestry that includes both Western Electric and Bell Telephone Laboratories. **audivox** lineage springs from the pioneer experiments of Dr. Alexander Graham Bell, furthered by the development of the hearing aid at Bell Telephone Laboratories, brought to fruition by Western Electric and **audivox** engineers.

Alexander Graham Bell

audivox

Successor to *Western Electric* Hearing Aid Division
123 Worcester St., Boston, Mass.

all-transistor Model 72 by Audivox

new:

audivox presents a versatile new tool in the psychological and somatic management of hearing loss — the Model 72 "New World." Because it departs completely from conventional hearing-aid appearance, this tiny "prosthetic ear" may be worn as a barrette, tie clip, or clasp without concealment. Resultant benefits include new poise and new aural acuity for the wearer through free-field reception without clothing rustle.

MANY DOCTORS rely on career Audivox dealers for conscientious, prompt attention to their patients' hearing needs. There is an Audivox dealer — chosen for his interest, ability, and integrity — in every major city.

the thoroughbred hearing aid

Meat...

in Geriatric Nutrition

Although the nutrient needs for optimal health in the aged are not known to differ significantly from those in younger adults,[1] it has been shown that the daily protein requirements in elderly patients vary from person to person. Ascertained values range from below to above allowances recommended for persons in earlier years of adulthood.[2]

According to criteria such as "physical activity, gastrointestinal structure and function, pathologic disturbances, and chemical balances," it is suggested that an optimal diet for the elderly patient should provide at least 20 per cent of its calories in the form of protein.[3]

For several reasons this high intake of protein appears desirable. Decreased activity in the aged tends to induce loss of tissue protein. Preservation of protein enzymes and of endocrinal harmony necessary for supporting anabolic processes requires adequate protein nutrition. Also, the aged person usually is able to handle the end products of protein metabolism satisfactorily.

Generous amounts of tender lean meat can go a long way in supplying the needs of the aged for top quality protein. From 25 to 30 per cent or more of cooked lean meat is protein. Other valuable contributions include the B group of vitamins and essential minerals, especially iron, phosphorus, and potassium. The easy and almost complete digestibility and the palate appeal of meat constitute physiologic values important in the nutrition of the geriatric patient.

---

1. Sebrell, W. H. Jr., and Hundley, J. M.: Malnutrition, in Stieglitz, E. J.: Geriatric Medicine, Medical Care of Later Maturity, ed. 3, Philadelphia, J. B. Lippincott Company, 1954, chap. 13.

2. Ohlson, M. A.; Roberts, P. H.; Joseph, S. A., and Nelson, P. M.: Nutrition and Dietary Habits of Aging Women, Am. J. Pub. Health *40*:1101 (Sept.) 1950.

Albanese, A. A.; Higgons, R. A.; Vestal, B.; Stephanson, L., and Malsch, M.: Protein Requirements of Old Age, Geriatrics 7:109 (Mar.-Apr.) 1952.

Roberts, P. H.; Kerr, C. H., and Ohlson, M. A.; Nutritional Status of Older Women; Nitrogen, Calcium, Phosphorus Retentions of 9 Women, J. Am. Dietet. A. *24*:292 (Apr.) 1948.

Kountz, W. B.; Hofstatter, L., and Ackermann, P.: Nitrogen Balance Studies in Elderly People, Geriatrics 2:173 (May-June) 1947.

Kountz, W. B.; Hofstatter, L., and Ackermann, P. G.: Nitrogen Balance Studies in 4 Elderly Men, J. Gerontol. 6:20 (Jan.) 1951.

3. Freeman, J. T.: Clinical Correlations in Geriatric Nutrition, J. Clin. Nutrition *1*:446 (Sept.-Oct.) 1953.

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute

Main Office, Chicago...Members Throughout the United States

ELECTRON PHOTOMICROGRAPH

Diplococcus pneumoniae 44,000 X

Diplococcus pneumoniae (Streptococcus pneumoniae) is a Gram-positive organism commonly involved in

lobar—and bronchopneumonia • chronic bronchitis • mastoiditis • sinusitis otitis media • and meningitis.

It is another of the more than 30 organisms susceptible to

PANMYCIN*

TETRACYCLINE HYDROCHLORIDE

100 mg. and 250 mg. capsules

Upjohn

*TRADEMARK, REG. U. S. PAT. OFF.

A Modern Hospital for the Treatment of Alcoholism

A private hospital employing the latest scientific Hormones-Vitamin treatment (*Hormovit), Conditioned Reflex, Psychological, Psychiatric, Biological and other tested methods for the rehabilitation of consent patients suffering from alcoholism.

Under the direction of a competent licensed physician with five consulting physicians subject to call. Registered nurses in charge 24 hours daily.

All equipment modern with facilities to take care of fifty patients both male and female.

The White Cross Hormones-Vitamin and Conditioned Reflex Treatment is a common sense approach to the actual removal of the CAUSES creating the desire for alcohol. It is the result of years of clinical research and experience ... sound in principle ... thoroughly safe ... successfully used in thousands of cases.

Approved and licensed by the Virginia State Hospital Board. Atop beautiful Mt. Regis, in the quiet serene mountains of Virginia, conducive to rest, comfort and recuperation. Doctors' inspection invited. For information, phone or write

WHITE CROSS HOSPITAL

Five Miles West of Roanoke on Route No. 11

Salem, Virginia — Phone Salem 4761

*Hormovit is the exclusive trade mark of the White Cross Hormones-Vitamin Treatment

Copyright 1952, H. N. Alford, Atlanta, Ga

FOR THE FIRST TIME!

A FAMOUS NAME BRAND WITH A FILTER!

OLD GOLD FILTER KINGS

The One Filter Cigarette that really Tastes like a Treat.

Here's the first famous name brand to give you a filter. And when you see the Old Gold name on the pack, you know you're getting a quality tobacco product.

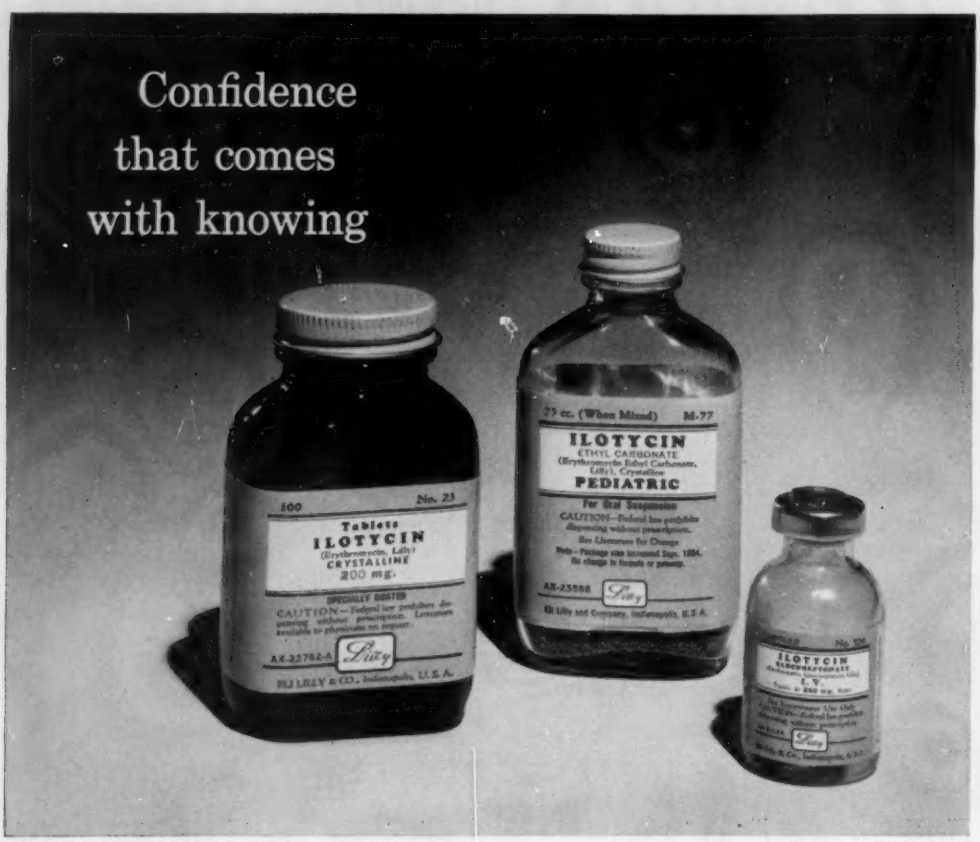
Rich tobacco taste—the Old Gold tobacco men have done it again! The world's most respected tobacco craftsmen have created a wonderful new filter cigarette that reflects every year of their company's nearly 200-year tobacco heritage. Old Gold Filter Kings give you true tobacco taste in every single puff.

On sale now along with the other members of the Old Gold Family—new Old Gold Filter Kings sell at a popular filter price. Whichever kind of cigarette you prefer, just make sure it's one of the family . . . America's First Family of Cigarettes.

True filter—true flavor—The effective filter that lets real flavor through. Pure white . . . never too loose . . . never too tight—this easy draw filter makes every puff taste like a treat.

Doctors: Today Old Gold Filter Kings are sold in most U. S. cities, and our distribution is expanding every day. If your city does not yet have Filter Kings, simply write to P. Lorillard Company, 119 W. 40th St., New York 18, N. Y., and special arrangements will be made to make them available to you.

P. Lorillard Company
Established 1760



ILOTYCIN

(ERYTHROMYCIN, LILLY)

consider ILOTYCIN (ERYTHROMYCIN, LILLY) FIRST

Lilly

QUALITY / RESEARCH / INTEGRITY

How reassuring to know that 'Ilotycin' is an antibiotic with *unexcelled spectrum!* Over 80 percent of all bacterial infections seen in medical practice respond to it. Yet, 'Ilotycin' is *notably safe;* bacterial balance of the intestine is not significantly disturbed. Also, 'Ilotycin' *kills pathogens.* Dead organisms cannot become resistant or spread infection. Since it is a *quick-acting* antibiotic, infections yield rapidly. Finally, 'Ilotycin' is *chemically different;* thus, virtually no gram-positive pathogens are inherently resistant to 'Ilotycin'—even when resistant to other antibiotics.

ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA, U.S.A.

NORTH CAROLINA MEDICAL JOURNAL

OWNED AND PUBLISHED BY

THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

VOLUME 16 JANUARY, 1955 NUMBER 1

THE GOLDEN AGE OF MEDICINE

WILBURT C. DAVISON, M.D.

DURHAM

More progress has been made in medicine in North Carolina and elsewhere during the past 50 years than in the preceding 50 thousand. It is hard to realize that prior to 1900 only two diseases — smallpox and scurvy— could be prevented, and that specific drugs were available for only three conditions— namely, malaria, worms and scabies. Quinine usually cured malaria, and worms succumbed to many remedies including garlic, the odor of which was offensive even to worms[1]. When Naaman went down to wash in the River Jordan, the sulfur water cured his scabies, although the Bible called it leprosy. Patients suffering from other diseases either recovered spontaneously or died. In fact, some of the remedies used, such as drastic purgation and bleeding, were actually harmful.

A half century ago, many infants did not survive their first summer, as may be seen from a study of gravestones. For example, the following three inscriptions are in St. Johns Cemetery near Towson, Maryland— Frankie, son of David and Mary Hanna, born April 24, 1875, died July 8, 1875; Maggie, born May 27, 1876, died July 1, 1876; Johnny, born May 19, 1877, died July 28, 1877[2]. Even at the beginning of this century, 10 per cent of all infants died. Only the breastfed babies, and not all of those, survived. At present, the infant death rate is only one quarter of that in 1900.

Reduction in Communicable and Nutritional Diseases

The State Board of Health, and later the county boards of health, together with better teaching of pediatric and preventive medicine in the medical schools, have enabled family physicians, pediatricians, and health officers to prevent many diseases and to reduce the death rate. For example, in 1916, when North Carolina implemented the model vital statistics law, 3,577 persons died of tuberculosis, but by 1952 the number had been reduced to 543. Only 3 died of typhoid fever in 1952, in contrast to 702 in 1916. In 1916 there were 410 diphtheria deaths, and only 9 in 1952.

The tuberculin testing of cattle started in 1890, pasteurization of milk was advocated in 1908, the concept of vitamins was introduced in 1906 (though Christopher Columbus brought Seville oranges to this hemisphere in 1492 to prevent scurvy among his sailors, and the American Indians used a decoction of North Carolina pine needles for the same purpose). Now scurvy, rickets and pellagra, thanks to Governor Gardner's home gardens and the Red Cross program, are medical curiosities.

Whooping cough and typhoid vaccines, diphtheria and tetanus toxoids, and smallpox vaccination have almost eliminated those diseases.

This great progress in health in North Carolina was started by Drs. Richard Henry Lewis, Solomon Sampson Satchwell, Thomas Fanning Wood, and Watson S. Rankin, the first full-time health officer for this and any other state, who was appointed in 1909. Dr. Rankin had been professor of pathology at Wake Forest, and has more than fulfilled Dr. William H. Welch's statement that he was a "most capable and efficient young man of much promise." The first full-time county health department was in Guilford in 1912.

One of the great health achievements in North Carolina was the hookworm campaign initiated by Dr. Charles Wardlaw Stiles in

From the Department of Pediatrics, Duke University School of Medicine and Duke Hospital, Durham, North Carolina.

1910 and carried forward by Dr. Rankin, Dr. John A. Ferrell, and others under the direction of Dr. Wickliffe Rose of the Rockefeller Sanitary Commission. One of the by-products which was beneficial to me if not to the state was my appointment as dean of the Duke Medical School. When Mr. Duke added a codicil to his endowment establishing a medical school and hospital, Dr. William P. Few consulted Drs. Rankin and Rose about a dean, and was referred to Dr. Welch, who, probably regarding me as a superfluous assistant dean at The Hopkins, recommended me, and for better or worse, the organization of the Duke Medical School was started in 1927.

The State Laboratory of Hygiene which was established under the leadership of Dr. Clarence A. Shore and ably continued by Dr. John H. Hamilton has been of great value in the treatment and prevention of disease with biologic materials, as well as in the diagnostic field. Sanitary engineering, started by Colonel J. L. Ludlow and the State Board of Public Welfare likewise have made great advances in North Carolina.

The high standard of research in this state is exemplified by the work of Drs. William deB. MacNider, William Allen, William Jenner Wood, and Frederic M. Hanes, to name only a few of the many who have contributed to medical progress in North Carolina.

Medical Education

The history of medical education in North Carolina has been ably described by Drs. J. Howell Way, L. B. McBrayer, and Frederick R. Taylor. There have been at least 10 medical schools in the state: the University of North Carolina at Raleigh and later at Chapel Hill; Edinborough Medical College in Robeson County; Leonard Medical School at Raleigh; North Carolina Medical College at Davidson and Charlotte; Bowman Gray School of Medicine at Wake Forest and later at Winston-Salem; College of Physicians and Surgeons at Arlington; Duke at Durham; the College of Physicians and Surgeons at Wilmington; and two schools at Jamestown, one operated by Dr. Madison Lindsey and another by Dr. Shubel. The Western North Carolina Medical College at Asheville was refused a charter by the State Medical Society.

After the purge of 1910 following the Flexner report, only the two-year schools at Chapel Hill and Wake Forest remained until Duke opened as a four-year school in 1930. The magnificent contribution of the late Bowman Gray enabled the two-year school at Wake Forest to move to Winston-Salem in 1941 and open as a four-year school. The Legislature appropriated money to convert the excellent two-year school at Chapel Hill into a superb four-year school in 1952, with the Memorial Hospital as one of the best hospitals in the country.

The School of Public Health and the Dental School at Chapel Hill also have greatly aided the health program.

Hospitals and Sanatoria

The growth of hospitals has been an important factor in medical progress in North Carolina. In 1900 there were only 527 general hospital beds in the state. Since 1924, however, starting with the establishment of the Duke Endowment, the funds of which assisted in the building, equipment, and operation of hospitals in North and South Carolina, and with the founding of the North Carolina Medical Care Commission under Governor J. Melvin Broughton and Dr. Clarence Poe, with appropriations by the Legislature and funds provided by the Hill-Burton Bill, the number has increased to more than 10,000. Among these great assets to the state is the Moses Cone Memorial Hospital at Greensboro.

The establishment of tuberculosis sanatoria, started by Dr. J. E. Brooks, the construction of the Orthopedic Hospital at Gastonia under the leadership of Dr. Oscar Miller, the crippled children's school and well-baby clinics distributed throughout the state, the Cerebral Palsy Hospital at Durham, and the early treatment centers for venereal disease, all have greatly contributed to medical progress.

The organization of the Hospital Care Association in Durham in 1933 and of the Hospital Savings Association in Chapel Hill in 1935 have enabled many North Carolinians to have hospital care within their means.

Contributions to Military Medicine

This last half century also has had two world wars, in which the physicians and nurses of North Carolina have more than fulfilled their share of duty. Base Hospital No. 65 was organized in North Carolina by Dr. J. Wesley Long, Frederic M. Hanes, James B. Bullitt, and others, and it saw

service overseas in 1918. In World War II the Sixty-Fifth General Hospital, organized by Duke Medical School with Drs. Elbert L. Persons, C. E. Gardner, Jr., and others, also served overseas. In addition, several hundred physicians and nurses have served in other military units, many of whom gave their lives in these wars.

Further Advances

Perhaps the most spectacular progress has come with the introduction of the sulfonamides, the antibiotics, and other "wonder drugs" during the last 20 years. It is difficult to realize that two-thirds of the drugs now in use were unknown 10 years ago[3], and that it was not until 1916 that the late Dr. George M. Cooper, who as the beloved head of the infancy and maternal welfare program of the State Board of Health has done as much as anyone to reduce infant mortality in North Carolina, gave the first dose of salvarsan, the earliest of the wonder drugs, which has now been displaced by penicillin.

The benefit of this amazing progress would not have been available to the people of North Carolina without the unstinting services of all of the members of the medical profession and their county, state, regional, and national organizations, together with the Tri-State Medical Association, the Seaboard Medical Association, the North Carolina Pediatric Society, and the North Carolina Chapter of the American Academy of General Practice.

Through the meetings, publications, and journals of these organizations knowledge was disseminated as fast as it was discovered. The State Medical Society has grown from 515 members in 1901 to 2,673 in 1953. It is interesting that this Society was among the first to admit women to membership, Dr. Susan Dimock being elected in 1872. The oldest of the county medical socities apparently is that of Pitt, organized in 1867.

These advances have been reflected in hospital and office practice. For example in 1930, 7 per cent of the children admitted to Duke Hospital had diphtheria, and 4 per cent were syphilitic. Now diphtheria is a rarity, and a positive serologic test for syphilis is regarded as erroneous until verified. As a result of this progress, there has been a marked shift from the treatment of medical, pediatric, and geriatric patients in hospitals to treatment on an ambulatory basis in offices and clinics. This modern teamwork between doctors, nurses, technicians, social workers, and psychologists is keeping patients well and treating them instead of their diseases[4].

Conclusion

It is impossible to list all of the physicians and surgeons of the state who have contributed to the advances which have been made. Requests for nominations sent to several men who are familiar with the history of the medical profession of North Carolina of the past half century elicited more than 100 names of those who in a large measure have been responsible for this Golden Age of Medicine[5].

References

1. Holt, L. E.: The Diseases of Infancy and Childhood, ed. 1, New York, D. Appleton & Co., 1897, p. 401.
2. Halley, C. R. L.: Personal communication.
3. Time 60:38 (Aug. 18) 1952.
4. (a) Packer, H.: Family Care Programs in Medical Education, South. M. J. 47:689-693 (July) 1954. (b) Coleman, J. P.: Comprehensive Medical Care Programs at the University of Oklahoma School of Medicine and the University Hospital, *ibid.* 897-901 (Sept.) 1954.
5. (a) Bierring, W. L.: A Golden Epoch in American Medicine, Pharos, 16:12-21 (Nov.) 1952. (b) Bruce, L. M., and Davison, W. C.: Progress in Child Health (in press).

INFANTILE CORTICAL HYPEROSTOSIS*†

JAMES B. SIDBURY, M.D.
and
J. BUREN SIDBURY, M.D.
WILMINGTON

Infantile cortical hyperostosis is a disease of infants characterized by the usually sudden onset of swelling of the face, thorax or extremities, hyperirritability, fever, fluctuating course and roentgenographic evidence of periosteal new-bone formation[1]. In the past, this disease entity has been considered a rarity, but the occurrence of 10 cases in a single pediatrician's practice would seem to belie this contention.

Incidence and Etiology

We have analyzed 69 cases of infantile cortical hyperostosis, including the 10 cases seen at the Babies Hospital in Wilmington. Age is a decisive factor; in no unquestionable cases did the onset occur later than 5 months of age; the average age at onset

*From the Babies Hospital, Wilmington, North Carolina.

†Aided in part by a grant from the Harkins Medical Foundation.

Table 1

Initial Symptoms in 10 Cases

	No. Cases
Swelling and tenderness over bone	5
Hyperirritability	6
Fever	3
Meningismus	1
Pseudoparalysis	1
Persistent "mumps"	2

was 9 weeks. Sex and race were not determinants.

Our interest in the etiology of the disease was stimulated by the occurrence in siblings; onset in both infants was apparently before birth. Van Zeben[2] reported 3 cases from Holland, 2 in siblings and the third in a second cousin. Barba and Freriks[3] described the disease in siblings; the diagnoses were made antenatally by x-ray examination of the mother. Kitchen[4] reported the case of a patient with infantile cortical hyperostosis whose mother, by description of symptoms, had also been afflicted in infancy. In the light of these cases it became difficult not to give serious consideration to a genetic etiology. Supportive arguments are found in the familial pattern seen in these infants, the fact that the manifestations have been demonstrated in some cases antenatally, and that the average age of 9 weeks at onset is similar to that of pyloric stenosis, which is thought by many to be an inherited abnormality. The evidence is insufficient for an exact definition of the genetic mechanism.

Symptoms and Diagnosis

There was usually a sudden onset of symptoms in an apparently normal infant. The order of appearance of the clinical triad of fever, irritability, and tumor varied. In 7 of our 10 cases, fever and irritability preceeded the appearance of the tumor. Two of our patients had no known fever and two no irritability. The initial symptoms in 10 cases are listed in table 1.

The tumors were invariably found over bone. There was no erythema or warmth and the overlying soft tissue was movable. Table 2 indicates the fequency of bones involved.

The roentgenograms usually add positive evidence to clinical suspicion. X-ray studies show the periosteal new-bone formation along the diaphysis of the bone. Very early lesions may not be apparent. Roentgenographic studies in the late stages of the process may show healing by resorption of bone from the medullary cavity, leaving an enlarged bone with a thin cortex and a widened medullary cavity.

Table 2

Incidence of Bones Involved 69 Cases

	Per Cent		Per Cent
Mandible	77	Humerus	32
Tibia	44	Femur	32
Ulna	36	Fibula	18
Clavicle	35	Pelvis	6
Ribs	32	Skull	3

Treatment and Prognosis

Eight cases were followed long enough for healing to be evaluated. Clinical signs and symptoms were resolved at an average of 9 months of age. Four of these cases were followed long enough for the roentgenograms to indicate complete healing; an average of 27 months was required.

Previously considered a benign disease, the occurrence of deaths consequent to the disease gives us reason to reconsider the treatment, which heretofore has been symptomatic. There is some evidence that hormonal therapy (ACTH, cortisone)[3,5,6] mollifies the severity, shortens the course, and may prevent residual bone deformity. Hormonal therapy is indicated in the more severe cases.

Pathology

A search for clues to the pathogenesis of this disease led us naturally to look for the pathologic descriptions of necropsy and biopsy material. In most cases no biopsies were obtained. The most careful studies recorded are those of Sherman and Hellyer[7] of Chicago. A synthesis of the pathologic findings derived from their studies and the

Fig. 1. Roentgenogram illustrating the marked involvement of the mandible and the extensive soft tissue swelling.

Fig. 2. This film demonstrates extensive involvement of the radius and ulnar.

descriptions of others would indicate that the periosteum is mucinous and thickened, but is stripped easily from a thickened bone of irregular contour. Microscopic examination demonstrated involvement by the pathologic process of the overlying soft tissues, as well as of the bone and periosteum. Fibrous strands were found to extend from the periosteum into the overlying fascia, muscle, and adipose tissue. Evidence of degeneration of the soft tissues over the areas of bone involvement was observed. The arteries of the overlying soft tissue and periosteum showed intimal proliferation. The periosteum was hyperplastic and edematous. In the areas of osseous involvement the haversian pattern was imperfect and the haversian spaces were lined with osteoblasts, and contained poorly vascularized, loose, fibrillary tissue. Never was there evidence of hemorrhage or inflammation.

It seems reasonable that the arterial lesions are primary. The resultant local hypoxia produces edema and hyperplasia of the periosteum, which in turn results in the overproduction of imperfect bone. The lesions are tender and painful consequent to the tension of the periosteum caused by the proliferative process. The fever, leukocytosis, and elevation of the sedimentation rate are due in part to the tissue necrosis. Anemia and lowering of the serum iron is a nonspecific response to a persistent fever from any cause. The initial impetus, the arterial intimal proliferation, we hold to be an inherited defect.

Summary

A description of the clinical manifestations, roentgenologic findings, prognosis and treatment of infantile cortical hyperostosis is given. It is suggested that the condition is the clinical manifestation of an inherited defect of the arterioles supplying the affected areas. The resulting hypoxia causes focal necrosis of the overlying soft tissues and a proliferative reaction of the periosteum with resultant periosteal new-bone formation.

References

1. Caffey, J.: Infantile Cortical Hyperostosis, in Brenneman's Practice of Pediatrics, vol. 4, ch. 23, Hagerstown, Maryland, W. F. Prior Company, 1952, pp. 69-87.
2. van Zeben, W.: Infantile Cortical Hyperostosis, Acta paediat. 35:10-20, 1948.
3. Barba, W. P., and Freriks, D. J.: Familial Occurrences of Infantile Cortical Hyperostosis in Utero, J. Pediat. 42:141-150 (Feb.) 1953.
4. Kitchin, I. D.: An Atypical Case of Infantile Cortical Hyperostosis, J. Bone and Joint Surg. 33B:248-250 (May) 1951.
5. Bush, L. G., and Merrell, O. E.: Infantile Cortical Hyperostosis: Report of a Case Responding to Treatment with Corticotropin, J. Pediat. 40:330-333, (March) 1952.
6. Caffey, J.: Personal communication.
7. Sherman, M. S., and Hellyer, D. T.: Infantile Cortical Hyperostosis: Review of Literature and Report of 5 Cases, Am. J. Roentgenol. 63:212-222 (Feb.) 1950.

ACUTE INFANTILE HEMIPLEGIA

ALANSON HINMAN, M.D.

WINSTON-SALEM

Acute infantile hemiplegia is described as an acute illness, usually without any prodromal symptoms, in which the patient has a sudden convulsive seizure, becomes unconscious, usually vomits, and has a temperature rise to 103 F. or more. Usually the convulsions recur for several hours or longer and the child remains comatose. After the seizures cease, there is a gradual return to consciousness and the hemiplegia becomes evident. In the main, accessory clinical findings are noncontributory.

This syndrome has also been termed polioencephalitis, Marie-Strumpell encephalitis, Strumpell-Leichtenstern encephalitis, and infantile meningoencephalitis. It has been well described by Ford and Schaffer[1], Rothman[2], Bridge[3], and others.

Presentation of Cases

It is the purpose of this paper to present 29 cases of acute infantile hemiplegia, 11 of which occurred without preceding convulsions and 8 of which had no preceding or concurrent illness whatsoever. A careful search of the available literature has not revealed any previous reports of hemiplegia

Read before the Section on Pediatrics, Medical Society of the State of North Carolina, Pinehurst, May 5, 1954.

From the Pediatric Service of the North Carolina Baptist Hospitals, Inc., and the Department of Pediatrics of the Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, North Carolina.

Table 1
Summary of Eleven Cases Not Associated with Convulsions

AGE	SEX	NEUROLOGIC HISTORY	PRECEDING ILLNESS	BIRTH WEIGHT	SEQUELAE
3½ years	M	—	—	8' 13"	Partial recovery
15 months	F	—	—	8' 7"	Partial recovery; patient walks with brace
2½ years	M	—	+/- Fall 6 d *p.t.a.*	8'	Poor recovery
4 years	F	? Father's first cousin had epilepsy	—	7'	Partial recovery, but later developed Jacksonian seizures; Abnormal EEG
13 months	M	—	—	?	Fair; later *grand mal* seizures
11 months	M	—	—	9' 2¾"	Followed only 1 month; good recovery by then
12 months	M	—	+/- *URI*	6' 10"	Very poor recovery; *grand mal* and *petit mal* seizures
13 months	M	—	—	7' 8"	Fair recovery
3 months	F	—	—	7' 6"	Fair recovery
12 months	M	—	+++ (Pneumonia, acidosis, dehydration, phlebitis)	10' 8"	Good functional recovery
13 months	M	—	+++ (pertussis)	8' 8"	Poor recovery; later had localized, right-sided seizure
Average age: 19.2 months			2 with serious preceding illness	7 more than 1 S. D. birth weight	Development of subsequent seizures in 4

occurring in children without preceding or associated convulsive disorders or other acute infectious diseases.

The patients presented were all seen in the Pediatric Department of the Bowman Gray School of Medicine either at the time of their acute illness or at varying intervals following the onset of the hemiplegia.

Nonconvulsive cases

There were 11 cases of hemiplegia not associated with convulsions.

The average age of onset was 19 months, the earliest case occurring at 3 months and the latest at 4 years. Six cases (54.5 per cent) occurred between 11 and 13 months. There were 8 males and 3 females. In only 1 case (no. 4), (9 per cent) was there any history of neurologic disease in the family; in this case a first cousin of the father's was said to have epilepsy. In 7 of the 11 cases (63.6 per cent) there was absolutely no history of preceding illness or trauma. One child had a mild upper respiratory infection; one had had a fall from the bed six days prior to onset; one had been acutely ill and hospitalized with pneumonia, dehydration and acidosis, and a phlebitis had developed at the site of a cut-down; and in one patient who had had pertussis for two weeks, hemiplegia developed after a paroxysm of coughing.

It is interesting, but probably of no significance, that 7 of the 11 patients (63.6 per cent) were more than 1 Standard Deviation above the median in birth weight.

Four of the 11 patients (36.3 per cent) later had seizures. Only 2 of the 11 (18.1 per cent) were said to have made good recoveries, and 1 of these was followed for only one month after discharge from the hospital.

Convulsive cases

In 18 cases hemiplegia developed following convulsions.

The average age of these patients was 14.4 months. There were 13 females and 5 males. Ten of the 18 (55.5 per cent) had family histories of neurologic disease.

Of this group, 1 died and autopsy showed minimal leptomeningitis (organism undetermined) and focal encephalomalacia in the left fronto-parietal area. Five (27.7 per cent) had apparently complete and early recovery. Convulsive seizures later developed in 7 of the 18 (38.8 per cent). Hemiplegia followed by seizures recurred in 2 of the 18 (11.1 per cent).

It is noteworthy that there was a higher percentage of recovery in this group than in the nonconvulsive group. In both groups the percentage of patients who later had seizures is about the same.

In those patients who had had preceding convulsions, 55.5 per cent showed a family history of neurologic disease. In those patients who had not had preceding convulsions, only 9 per cent had such a family history.

Etiology

The etiology of this syndrome is largely a matter of conjecture. In the absence of as-

sociated illnesses, trauma, or of any other signs or symptoms of infection or disease, it is not feasible to get lost in the arguments for or against localized encephalitis that have been propounded to explain those cases of hemiplegia occurring with fever and convulsions.

Because of the relative permanence of the neurologic deficits in these cases, temporary disturbance in function such as that due to edema, hemorrhage, infection, or anoxia does not seem the likely cause. This same permanence does, however, point to vascular lesions, with resultant destruction of portions of the brain as etiologic agents.

The work of Tuthill[4] on changes in the elastic layer in the cerebral vessels showed that splitting and destruction of the elastic lamellae with secondary calcification was probably enhanced by infection or other intoxication. Her work was substantiated by Winkelman and Eckel[5], who also described atheromatous and arteriosclerotic changes associated with or following infections in infants and young children. It was their thesis that any of the changes occurring in the blood vessels in adults can and do occur in those of children, and that their occurrence is enhanced and speeded by the occurrence of acute infections.

Irish[6] discussed the occurrence of thrombotic and embolic cerebral vascular accidents in children, again emphasizing the relationship of infection to arterial or venous changes.

Ford[7], in discussing the occurrence of hemiplegia with fever and convulsions, felt that vascular damage is the most likely cause for the hemiplegia.

Needless to say, the number of these cases which reach autopsy is small, and our knowledge of the neuropathologic changes is thereby insufficient. The abrupt onset of symptoms unassociated with other signs of infection or illness, however, so closely parallels that of nonapoplectiform cerebral vascular accidents in adults that it would seem logical, in the light of our present knowledge, to assume a vascular etiology.

It is not within the scope of this paper to discuss the localization of the damage as related to the signs and symptoms. In our series electroencephalograms were done in only a few cases, and were not too helpful. Ventriculograms, when done, were negative, and other than general localization on the basis of peripheral changes, the actual site of the lesion could not be ascertained with accuracy.

Incidence

From the cases presented it is not possible to draw any significant statistical conclusions, nor is that the intent or purpose of this paper. However, it is possible to discuss several ideas. One is that this syndrome is not as rare as one might feel from the paucity of reports in the literature. Ford and Schaffer[1] reported a series of 200 cases and quoted Osler's report of some 300 cases[8]. Figures are lacking in some of the other studies although many of the authors speak of "frequently seeing" cases of hemiplegia.

Differential Diagnosis

Another point is that this syndrome is frequently confused with others, such as intracranial tumor, brain abscess, encephalitides, poliomyelitis and cerebral palsy. The occurrence would seem to be frequent enough to deserve careful delineation in the literature and to be considered in the differential diagnosis of neurologic disorders in infancy and childhood.

Although the history of the onset is of help in the differential diagnosis—that is, sudden hemiplegia with or without convulsion—a careful work-up, including lumbar puncture, hematologic studies, skull roentgenography, and possibly air encephalography and electroencephalography is of importance.

It would seem feasible, within the limits of our present knowledge of the etiology and course of this syndrome, to say that in the absence of antecedent disease or trauma, hemiplegia occurring with or without convulsion represents the end result of intracranial vascular damage of one type or another; that in reality the convulsive and nonconvulsive forms are merely clinical variants of the same syndrome. This would seem to be borne out in the similarity of the courses that have been seen in the present series of cases.

Treatment and Prognosis

The treatment, after the diagnosis has been established, is essentially supportive. Anticonvulsant therapy must be considered and in all likelihood should be started after the first episode, as there would seem to be

a moderately high rate of recurrence of seizures in these cases.

Prognosis must be guarded. Mental deterioration apparently occurs in a fair proportion of these children. Control of seizures is relatively difficult and at times impossible (Bridge[3]), and the parents need considerable help and support in understanding and accepting the problem. Even in the absence of convulsive seizures and mental retardation, the orthopedic deformities are in themselves a major difficulty. It is evident that the care and handling of such children could be done better through the coordination of several disciplines. The pediatrician may be the first to see the child and can handle the early acute stage, but consultation with the neurologist and the neurosurgeon may be necessary and should prove helpful in the differential diagnosis.

As convalescence begins, orthopedic and physical therapeutic advice is indicated in the better handling of the contractural deformities that occur.

Finally, counseling and treatment of both parents and child in a child guidance clinic or by a child psychiatrist will do much to aid in the acceptance of the handicaps, and may be quite prophylactic in decreasing the secondary behaviour disturbances that are so often sequelae of crippling.

Case Reports

Cases without preceding convulsions

Case 1: This 3½ year old male was the product of a full term pregnancy and a difficult forceps delivery, the birth weight being 8 pounds, 13 ounces. The family history was negative. The child had congenital nystagmus and strabismus, and his development was retarded. He was enuretic and encopretic prior to the hemiplegia. The patient had rubeola and varicella six months before the onset of the hemiplegia. He was walking across the room when he suddenly fell, having complete right hemiplegia and aphonia. The physical examination revealed a large head and a bruit over the right temporal area. A lumbar puncture was negative. Recovery was only partial.

Case 2: This 15 month old infant girl had a negative family history. The delivery was full term and spontaneous; the birth weight was 8 pounds, 7 ounces. Development was normal and there had been no serious illnesses prior to the hemiplegia. The infant was fretful the day of onset, when the right arm and leg suddenly became paralyzed. The physical examination was negative except for slight facial weakness, spastic paralysis of the right arm, and flaccid paralysis of the right leg. A lumbar puncture was negative. There was partial recovery of function.

Case 3: A 2½ year old male, this child was the result of a full term spontaneous delivery, with a birth weight of 8 pounds. The family history was unrevealing. The development was normal, and there had been no serious illnesses. A tonsillectomy and adenoidectomy had been performed at 1½ years of age. The child fell from the bed six days prior to the sudden onset of complete right-sided hemiplegia with aphonia. Physical examination revealed a slightly large head and flaccid right hemiplegia. The lumbar puncture revealed 14 mononuclear cells, a negative Pandy test, and normal dynamics. Ventriculograms were normal. There was partial recovery of function.

Case 4: The family history of this 4 year old girl revealed that the father's first cousin had epilepsy, type unknown. The gestation was nine months, the delivery spontaneous, and the birth weight 7 pounds. There had been normal development and no serious illnesses. There had been a sudden onset of left hemiplegia without facial involvement and unassociated with any illness. The physical examination was negative. There was partial recovery of function, but the child later developed Jacksonian seizures. The electroencephalogram showed abnormalities in the right tempero-occipital region.

Case 5: After a full term, spontaneous delivery, this 13 month old male infant did not breathe for several minutes. The family history was negative, and there had been no serious illnesses, until the sudden onset of a right hemiplegia. Physical examination revealed complete right hemiplegia. There was fair recovery of function, but the boy later developed *grand mal* seizures, which were partially controlled.

Case 6: This 11 month old male infant resulted from a full term, spontaneous delivery, and weighed 9 pounds, 2¾ ounces at birth. The development had been normal. The family history was negative. There had been no serious illnesses prior to the onset of a left hemiplegia upon awakening. Physical examination revealed a flaccid left arm and leg, and facial weakness. Lumbar puncture revealed 2 mononuclears, 3 polymorphonuclears, and the Pandy showed a slight trace. Bilateral subdural tap was negative. The electroencephalogram revealed possible deep-seated arterial thrombosis on the right. There was fair to good recovery in one month, although there were still signs of weakness. No further follow-up was made.

Case 7: This one year old male child had a birth weight of 6 pounds, 10 ounces. There had been a full-term, forceps delivery. The family history was negative. The development had been normal. The child had a fever and cough at the onset of the hemiplegia, and vomited several times. Physical examination revealed the child to be in the 50 percentile for height and weight. There was flaccid paralysis of the left arm, with spasticity of the left hand and weakness of the left leg. Lumbar puncture was negative. Pneumoencephalograms were normal. The child made a very poor recovery, but was almost able to sit after one year. Four weeks after the hemiplegia, he began to have *grand mal* seizures, which were controlled on medication. There were questionable *petit mal* attacks beginning one year after the hemiplegia.

Case 8: This 13 month old male child had a negative family history. The delivery was full term and spontaneous, the birth weight being 7 pounds, 8 ounces. The development had been slow. There had been no serious illnesses before the sudden onset of complete right hemiplegia. There was questionable mental retardation. Physical examination revealed a complete right hemiplegia. Electroencephalogram revealed paroxysmal activity in the left posterior temporal region with spike and wave. Skull films were negative. The child made a moderate recovery and was able to walk, with help, after six months.

Case 9: This 3 month old female infant, with a

negative family history, was the product of a full-term, spontaneous delivery, and had a birth weight of 7 pounds, 6 ounces. There had been sudden left hemiplegia, before which there had been no serious illnesses. Physical examination at 20 months of age revealed left hemiparesis with spasticity of the left hand. Pneumoencephalograms were negative, as were cerebral angiograms. A fair recovery was made, with the child being able to walk with a limp and use the left hand for steadying.

Case 10: This 1 year old male child had a birth weight of 10 pounds, 3 ounces. The delivery was full term and spontaneous, and the family history was negative. The development had been normal. The child had been treated at home for an upper respiratory infection and thrush. Ten days prior to the hemiplegia, he had a cold and earache. There was a sudden onset of dehydration and acidosis over a 12 to 18 hour period. At the time of admission, the child was in coma and suffering from acidosis, bilateral otitis media, and questionable pneumonia of the left lung base. The acidosis was treated in the hospital, and phlebitis developed at the site of the cutdown. The child continued comatose and then had a left hemiplegia with right facial paralysis. The physical examination revealed right facial and left arm and leg paralysis. A good recovery was made, with some residual weakness.

Case 11: A negative family history was presented in this 13 month old male child. There had been a full term, spontaneous delivery, with a birth weight of 8 pounds, 8 ounces. The development had been normal. The child had pertussis for two weeks, and while in the hospital had a sudden right hemiplegia, with a questionable convulsion or spell of coughing at the onset. The physical examination revealed a right hemiplegia, not involving the face, and questionable mental retardation. The lumbar puncture was negative. An electroencephalogram revealed widespread left cortical damage. The impression was that this child had had a post-pertussis cerebral hemorrhage, with hemiplegia. One year after the onset of the paralysis, he began having generalized and/or right-sided seizures. There was no real improvement in the spasticity after one year.

Cases with preceding convulsions

Case 1: This 15 month old female infant was the product of a full term spontaneous delivery, the birth weight being 7 pounds, 8 ounces. The family history was negative, and there had been no serious illnesses. The development had been normal. Two days prior to admission to the hospital, the child became irritable, had a severe generalized convulsion, then became comatose. The temperature ranged to 106 F. The physical examination revealed a comatose child with a temperature of 102 F. There were right-sided twitchings, spasticity of the upper extremities, and flaccid lower extremities. The lumbar puncture was normal. The child expired on the second hospital day. The postmortem examination revealed leptomeningitis and focal encephalomalcia in the left frontoparietal region.

Case 2: An 11½ month old female, this child was the result of a normal pregnancy and a spontaneous delivery. The birth weight was 8 pounds, 8 ounces. The family history revealed that a paternal uncle had suffered from seizures following a skull fracture. One sister had died with an intestinal obstruction and seizures, and two sisters had had seizures in infancy. This child had an upper respiratory infection with fever, and then suffered a generalized seizure which lasted for one hour, after which she was comatose for four hours. She had been treated with penicillin and sedatives. Four days later she began having frequent seizures and was admitted. She had had nine seizures in the 8 to 10 hours preceding admission, but she was not comatose. The physical examination revealed a temperature of 100.4 F., nystagmus to the left, and questionable left papilledema. There was right otitis media and a mild right hemiplegia. A lumbar puncture was negative. Skull films were negative. The electroencephalogram revealed widespread left-sided damage with active spike discharge focus. The child made a good recovery in three to four months, but the speech was slow and slurred at the age of 2 years, 10 months. There was no residual weakness.

Case 3: The family history in this 11 month old female revealed that a first cousin of the mother had seizures. The delivery had been full term and spontaneous, and the birth weight was 7 pounds, 8 ounces. The mother had pre-eclampsia. The development had been normal. Three weeks prior to admission, the child had an upper respiratory infection and fever, followed by a mild generalized convulsion. The temperature rose suddenly to 103 F., followed three hours later by a short generalized seizure, and then by a left-sided seizure with left hemiplegia. Physical examination revealed a lethargic child with left hemiplegia and left facial paralysis. The lumbar puncture was negative, as were the skull films. The child had apparently made a complete recovery by the second hospital day. She was completely well one month after discharge, and there was no further follow-up.

Case 4: A nine month old female with a negative family history, this child was the product of a nine month gestation and a spontaneous delivery. The birth weight was 7½ pounds. The development had been normal. Seven days prior to admission, the child had an upper respiratory infection and fever, with a subsequent convulsion. Three days prior to admission, the fever rose to 105 F., the child had three convulsions, and left hemiplegia ensued. Physical examination revealed an alert child with left hemiplegia, the arm being spastic and the leg flaccid. There was questionable viral pneumonia. The electroencephalogram was grossly abnormal, with extensive damage in the right central and parietal area. Lumbar puncture was negative, as were films of the skull and chest. The child was much improved one month later and seemed well two months later. Seven months after discharge from the hospital, physical examination revealed some incoordination on the left. Three years later the child had a slight limp on the left and was having *petit mal* seizures.

Case 5: This 2 year old child was the product of a full term, spontaneous delivery, the birth weight being 11 pounds. A sister had had seizures in infancy and an aunt also suffered from seizures. The development had been normal. A mild upper respiratory infection developed one week prior to admission. There was a sudden onset of generalized jerking, more pronounced on the right, two days prior to admission. Physical examination revealed a spastic right arm and flaccid right leg, with aphasia. Lumbar puncture was negative. At 2½ years of age, the child was readmitted with febrile convulsions. She had *petit mal* seizures until 6½ years of age, at which time they were controlled with phenobarbital. An electroencephalogram made at 4 years of age revealed minor changes on the right side. At 9¾ years, there was mild right residual weakness.

Case 6: This 7 month old male infant had a negative family history. The delivery had been full term and spontaneous, and the birth weight was 8 pounds. The development had been normal, and there were no serious illnesses. At 7 months old, the child had a fever and three generalized convulsions, the first lasting one-half hour, the second occurring on the

same day and the third on the next day. The cause of the fever was not determined. Physical examination at 4 years of age revealed a deviation of the tongue to the left and weakness of the left palate. The child was unable to protrude the tongue. There was slight scoliosis to the right and weakness of the left arm and hand, and he could not pronate or supinate. The left leg was weak. There was questionable mental retardation; the child drooled constantly. His speech was poor, and he was unable to use consonants. He was not seen after this examination at 4 years.

Case 7: This 1 year old male was the product of a full-term, spontaneous delivery, the birth weight being 6 pounds. The development had been normal, with no serious illnesses. The mother had had preeclampsia with hypertension; and a maternal uncle had convulsions in infancy. At age 1 the child had an ear infection and a right-sided convulsion. Lumbar puncture done during hospitalization was negative except for 12 cells. Physical examination was negative except for right hemiparesis, right athetosis, and impaired speech. The head turned to the left and the eyes deviated to the left and upward. A skull film was negative. He was treated with antibiotics. After the child returned home, the hemiplegia and aphonia lasted from three to four weeks. At 4 years of age, having been essentially well in the years between, he had an episode of fever, lethargy and vomiting, and a recurrence of right hemiplegia with right-sided seizures in status epilepticus. A pneumoencephalogram showed slight cortical atrophy on the left. An electroencephalogram revealed an abnormal area to the left, and the temporal region showed a large abnormal area. Return of good motor function occurred in one to two months. Eight months later the child was well and had no further seizures while on therapy.

Case 8: This 11 month old female was the product of a full-term, spontaneous delivery who weighed 7 pounds, 8 ounces at birth. There was normal development. There were no serious illnesses except for severe diarrhea at 3 months. Family history revealed that the maternal great-grandmother had had seizures in infancy, and that a maternal great uncle was also thought to have had seizures in infancy. Two days prior to admission at another hospital the infant had fever associated with upper respiratory infection and some diarrhea. She had had a febrile convulsion, right-sided, prior to the onset of this illness. The day before admission she had many right-sided seizures and a right hemiplegia. Results of a physical examination done at that hospital were not recorded here, but lumbar punctures were negative. The child had mild right hemiparesis. She remained well until 17 months of age, when she began to have fever with right-sided convulsions and recurrence of the hemiplegia. Lumbar puncture was negative. Skull films were negative. An electroencephalogram revealed a left-sided focal lesion suggestive of cortical scarring. She continued to have infrequent seizures in spite of therapy. She continued to have right-sided weakness. She was left-handed.

Case 9: This 16 month old female was the product of a full-term, spontaneous delivery, and weighed 5 pounds at birth. Family history revealed that one brother and one sister had had febrile convulsions in infancy. She developed normally. At 13 months she had fallen down 22 steps, striking her head in the right frontoparietal region. There were no other serious illnesses. At 16 months she had high fever, pneumonia, and convulsions with left hemiplegia. On physical examination her temperature was 105 F.; she was comatose, with left hemiplegia and pneumonia. She recovered and at 26 months of age had a second convulsion. There was a third convulsion at the age of 9 years. Physical examination at this time revealed skull roentgenograms to be normal. An electroencephalogram showed an extensive right-sided lesion. Cerebral arteriograms showed questionable hemangioma of the right cerebral hemisphere, but were not satisfactory. She did not return for follow-up studies.

Case 10: This 21 month old female was the product of a full-term, spontaneous delivery. Family history revealed that the paternal grandmother, father, and one brother had café-au-lait spots. There was a history of slightly slow development. At 21 months she had an afebrile right-sided convulsion which lasted for four hours resulting in right hemiplegia and residual right hemiparesis and speech defect. Physical examination done when the girl was 12 years old revealed café-au-lait spots mostly on the right. There was a question of right facial weakness. At this time the diagnosis was neurofibromatosis, but no definite connection with convulsion or hemiparesis was made. The patient's intelligence quotient was 92. Follow-up over the next two years showed no great change in her neurologic status.

Case 11: This 1 year old female infant weighing 8 pounds, 14 ounces at birth, was the product of a full-term, forceps delivery. Family history was negative. There had been no serious illnesses, and the child had developed normally. Five days prior to admission she had a convulsion. In the hospital she had a left-sided Jacksonian seizure with resultant hemiplegia. There was also a diagnosis of pneumonitis. Physical examination showed left hemiplegia with nuchal rigidity. Lumbar puncture was bloody, but it was felt that this was traumatic. There was no follow-up.

Case 12: This 2½ year old male child was the product of a full-term, spontaneous delivery, and weighed 8 pounds, 10 ounces. Family history revealed that a paternal aunt had had "spells" from infancy to 6 years of age, and none since that age. No serious illnesses had preceded the present illness. The child was asleep in her father's lap when she had a sudden right-sided seizure lasting 1½ hours. Physical examination revealed a right hemiplegia. Lumbar puncture was negative, as were electroencephalograms and roentgenograms. There was spontaneous recovery by the second hospital day. There was no follow-up.

Case 13: This 9 month old male was the product of an eight months' pregnancy and weighed 6 pounds, 14 ounces at birth. There was a history of slow development. Family history was negative. Prior illnesses included diarrhea, vomiting, fever, and dehydration. One week prior to admission the child had an upper respiratory infection; three days prior to admission he had diarrhea. There was dehydration and anemia on admission. Three days after admission 24 hours of general convulsion was followed by left hemiplegia. Physical examination showed a dehydrated, pale infant whose right arm and leg were spastic and whose left arm and leg were flaccid. Lumbar punctures twice were bloody, then showed elevated pressure and a few cells. Subdural taps and roentgenograms were negative. There was no follow-up.

Case 14: This 16 month old female was the product of a full-term, spontaneous delivery, weighing 6 pounds, 5 ounces. She had developed normally. Family history revealed that the father had had febrile seizures up to 2 years of age; one sister and one cousin had febrile convulsions. This child had had febrile convulsions at 4, 6, 9, 12, and 14 months of age. On the day prior to admission she had had a 2½-hour generalized seizure, followed by a right-sided seizure and right hemiplegia. Physical examination showed right hemiplegia and questionable

left facial weakness. Roentgenograms and lumbar punctures were negative. There was spontaneous recovery of motion by the third hospital day. The child was discharged on phenobarbital and had no residual weakness.

Case 15: This 2 year old female child was the product of a full-term, spontaneous delivery, and weighed 6 pounds, 2 ounces at birth. She had developed normally. Family history was negative. She had had febrile convulsions at 8 and 18 months of age. At 2 years of age she had a prolonged febrile seizure followed by right hemiplegia. The child was seen at this hospital at the age of 10 years for an anticonvulsant work-up. Physical examination at that time revealed right temporal hemianopia, and right facial, right arm and right leg paresis. An electroencephalogram showed extensive damage in the left frontal area. A pneumoencephalogram showed atrophy of the left cerebral hemisphere. The diagnosis was convulsions of the *petit mal* and *grand mal* type, which were hard to control. There was no real change in the hemiparesis.

Case 16: This 6 month old female was the product of a full-term, spontaneous delivery, and weighed 7 pounds, 14 ounces at birth. There was normal development. Family history was negative. There was no previous serious illness except when she had a febrile convulsion at 6 months, with transient right hemiplegia lasting for three weeks. At 14 months she had a left-sided seizure and left hemiplegia. Physical examination revealed left hemiplegia and facial weakness. Lumbar puncture, skull, and cervical spine films were negative. Three months later there was fairly complete recovery except for leg weakness. There was a question of *petit mal* seizures 6 months later. There was no follow-up.

Case 17: This 16 month old female was the product of a full-term, spontaneous delivery, and weighed 9 pounds, 4½ ounces at birth. Family history was negative. Development was normal. At 16 months she had a right-sided febrile convulsion which lasted for four hours, with residual right hemiplegia. Physical examination was negative except for right-sided clonic convulsions and right hemiplegia. The former were controlled with Pentothal given intravenously. Lumbar puncture was negative. There was complete clearing by the fifth hospital day.

Case 18: This 11 month old male was the product of a full-term, spontaneous delivery, weighing 6 pounds, 11 ounces. Family history revealed that the paternal grandmother had *grand mal* seizures. Development was normal. This 11 month old child had had 6 afebrile seizures starting at 6 months of age. The last one was followed by hemiplegia from which she partially recovered. Physical examination showed paresis of the right arm and leg. Electroencephalogram revealed a left-sided lesion, type undetermined. There was no follow-up.

Summary and Conclusions

1. The syndrome of acute infantile hemiplegia has been described.

2. Eleven cases are presented which do not fit this description and yet constitute acute infantile hemiplegia.

3. Eighteen cases that do fit this description of the syndrome are presented.

4. The theories of etiology are briefly discussed. It is suggested that the most likely cause for the unexplained onset of hemiplegia in infants and young children is a vascular accident of some type, either embolic, thrombotic or hemorrhagic, following rupture of a vessel wall. Infection is thought to play a role in producing damage to cerebral vessels, as well as those in other parts of the body.

5. The convulsive and nonconvulsive forms of acute infantile hemiplegia are felt to be variants of the same syndrome.

6. It is felt that presenting this small series of cases will be of some help in distinguishing the condition from paralyses and spasticities resulting from other causes such as acute poliomyelitis, encephalitis, and cerebral dysgenesis.

7. A holistic approach, with coordination of the pediatric, neurologic, orthopedic, physical therapeutic, and child psychiatric disciplines, is suggested in the handling of children who have had acute infantile hemiplegia.

References

1. Ford, F. R., and Schaffer, A. J.: Etiology of Infantile (Acquired) Hemiplegia, Arch. Neurol. & Psychiat. 18:323-347 (Sept.) 1927.
2. Rothman, P. E.: Polioencephalitis, Am. J. Dis. Child. 42: 124-132 (July) 1931.
3. Bridge, E. M.: Epilepsy and Convulsive Disorders in Children, New York, McGraw-Hill Book Co., Inc., 1949, pp. 70-82.
4. Tuthill, C. R.: The Elastic Layer in Cerebral Vessels, Studies of Newborn and of Children, Arch. Neurol. & Psychiat 26:268-278 (Aug.) 1931.
5. Winkelman, N. W., and Eckel, J. L.: Arterial Change in the Brain in Childhood, Am. J. Syph. & Neurol. 19:223-237 (April) 1935.
6. Irish, C. W.: Cerebral Vascular Lesions in Newborn Infants and Young Children, J. Pediat. 15:64-74 (July) 1939.
7. Ford, F. R.: Diseases of the Nervous System in Infancy, Childhood and Adolescence, ed. 3, Springfield, Ill., 1952, pp. 779-782.
8. Thomas, H. M : Hemiplegia, in Osler, Sir William, and McCrae, T.: A System of Medicine, Oxford University Press, 1910, vol. 7, p. 359.
9. Ranson, S. W., and Clark, S. L.: Anatomy of the Nervous System, ed. 9, Philadelphia, W. B. Saunders Company, 1953.

HYDATIDIFORM MOLE AND TOXEMIA OF PREGNANCY

JAMES A. CROWELL, M.D., F.A.C.S.

CHARLOTTE

The recent medical literature has contained frequent studies showing the relationship of hydatidiform mole to chorionepithelioma. There has been very little discussion, however, of the more frequent and occasionally serious toxemia of pregnancy which is sometimes associated with hydatidiform mole.

Chesley, Cosgrove and Preece[1], in an extensive survey of the world literature, collected 35 cases of probable or alleged eclamp-

From the Department of Obstetrics and Gynecology, Charlotte Memorial Hospital, and The Nalle Clinic, Charlotte.

sia occurring in conjunction with hydatidiform mole. To this they added 1 case of their own. Five of the 36 patients died, a mortality of 14 per cent. Mueller and Lapp[2] reported a case of hydatidiform mole, followed by postpartum eclampsia and chorionepithelioma, with recovery. Pigeaud[3] reported a case of eclampsia developing in the early stages of hydatidiform mole at four months gestation, with eventual recovery.

I have recently treated a case of severe toxemia in a patient with an early pregnancy associated with hydatidiform mole. A complete report of the case is presented.

Case Report

A 26 year old white woman, para O, gravida II, whose last menstrual period was February 19, 1953, gave a history of a seven months' pregnancy terminating in a premature stillborn delivery in 1950. She was transferred from the care of her local doctor to that of another doctor, and was admitted to Mercy Hospital on June 20, 1953. She stated that she had been well until one week previously, when a low grade, headache developed, and her legs and eyelids began to swell. On admission she had pretibial edema. The blood pressure was 160 systolic, 100 diastolic. The abdomen was enlarged to the size of a four and a half months' pregnancy. The urinalysis revealed a 3 plus albuminuria. She had felt fetal movement two weeks previously. During the next six days she received the usual medical treatment for toxemia. During this time the blood pressure ranged from 130 to 170 systolic over 70 to 110 diastolic. The urine showed a 1 to 4 plus albumin, with many finely granular and hyaline casts. The red blood cell count was 3,080,000 and hemoglobin 64 per cent. The nonprotein nitrogen was 32 mg. per 100 cc. She was discharged from the Mercy Hospital on June 25, 1953. She was then followed for a short time as an ambulatory patient, and her doctor recommended that the pregnancy be interrupted. The patient could feel fetal movement and was extremely anxious to continue the pregnancy; so she refused the interruption of the pregnancy and engaged a different doctor. She was followed only for about two weeks by this third doctor when he referred her to my care.

I first saw this patient on July 23, 1953, at which time she weighed 134 pounds. The blood pressure was 125 systolic, 85 diastolic. The size of the fundus indicated a five and a half months' pregnancy, with the fetal heart in the left lower quadrant. There was slight pitting edema of the feet and ankles, and the urinalysis showed a 2 plus albumin. On July 30, 1953, the weight was 141 pounds. The blood pressure was 120 systolic, 75 diastolic, and the urinalysis revealed a 2 plus albumin. On August 6, 1953, the patient's weight was 144 pounds, blood pressure 126 systolic, 78 diastolic, and there was a 3 plus albuminuria. She was admitted to Charlotte Memorial Hospital on August 6, 1953.

During the next seven days she had a complete medical work-up and treatment for toxemia. The blood pressure ranged from 130 to 170 systolic, over 75 to 100 diastolic. The catheterized urine showed from 1 to 2 plus albuminuria, with granular and hyaline casts. The phenolsulfonthalein on August 7, 1953, was as follows: first specimen, 35 per cent; second specimen, 15 per cent; third specimen, 6 per cent; fourth specimen, 3 per cent; total, 59 per cent. On August 7, the urea nitrogen was 10 mg. per 100 cc., and the uric acid 7.0 mg. On August 8, the total protein was 4.5 Gm. per 100 cc., albumin 2.9, globulin 1.6. On August 10, the blood uric acid was 6.1 mg., and on August 13 it was 5.8 mg. An intravenous pyelogram on August 8 showed "a single fetus in breech presentation. The fetus is developed to about four to five months' duration. The uterus seems larger than it ought to be for the size of the fetus. The dye appears promptly and in good concentration on both sides. Impression: (1) Hydramnios, (2) physiologic dilatation of the right kidney."

The patient again refused an interruption of the pregnancy, and was discharged on August 13, 1953. She was readmitted to the Charlotte Memorial Hospital on August 18 in active labor, following a moderate spontaneous hemorrhage at home. Labor progressed rapidly. The membranes ruptured spontaneously, and there was evidence of polyhydramnios. She was delivered by assisted breech extraction of an abnormal female child weighing 1 pound, 4 ounces. The placenta had to be partially removed manually, and was extremely large, with evidence of typical hydatidiform mole formation over approximately three fourths of its area. Following this procedure, the interior of the uterus was carefully explored and all fragments were removed. Pathologic examination showed typical hydatidiform mole formation over the majority of the placenta, and an abnormal female child with spina bifida. The patient made an uneventful convalescence. The blood pressure remained within normal limits. The urine showed a 1 plus albumin. On August 18, 1953, the blood uric acid was 7.5 mg. per 100 cc. She received one blood transfusion while in the hospital, and was discharged on August 23, 1953. She has since been followed in the office and has returned to good health. The blood pressure and the urinalysis are entirely normal.

Analysis of 15 Cases of Hydatidiform Mole

From 1942 to 1953 we have had 15 cases of hydatidiform mole at Charlotte Memorial Hospital. An analysis of these cases is shown in tables 1 and 2.

Frequency

The incidence of hydatidiform mole has been reported as occurring once in approximately 1,500 gestations. Chesley and others[1] reported 1 to 1,321 deliveries at the Margaret Hague Maternity Hospital, and Mueller and Lapp[2] reported an incidence of 1 to 1,349 pregnancies at King's County Hospital, Brooklyn, New York. Our incidence was 1 to 759 deliveries at the Charlotte Memorial Hospital.

Pathology

Characteristically, a hydatidiform mole consists of many small, grape-like vesicles, which have developed instead of a normal placenta and fetus. While pathologists are not in complete agreement, a hydatidiform mole is generally considered to be a true neoplasm of the chorionic epithelium[4], with enlargement of the chorionic villi. Secondary cystic changes take place in the stroma. The three microscopic pathologic changes which characterize hydatidiform mole are: (1) tro-

Table 1

Analysis of Fifteen Cases of Hydatidiform Mole 1942–1953

Age of patients 19-43 yrs. Average age 28.5 yrs.

Parity	No. Cases	Per Cent
1st pregnancy	6	40.0
2nd pregnancy)	3	20.0)
3rd pregnancy) Multiparous	5	33.3) 60%
4th pregnancy)	1	6.7)
Abnormal bleeding	15	100
Secondary anemia	10	66.6
Size of uterus larger than expected	5	33.3
Size of uterus smaller than expected	1	6.7
Excessive weight gain	2	13.3
Toxemia of pregnancy	4	26.7
Associated ovarian cyst (one large lutein cyst removed surgically)	3	20.0
X-ray evidence of hydatidiform mole	4	26.7
Biological pregnancy test used in diagnosis	2	13.3

Table 2

Termination and Follow-Up

Termination of Hydatidiform Mole	No. Cases	Per Cent
A. Spontaneous abortion and dilatation and evacuation	10	66.6
B. Induced abortion and dilatation and evacuation	1	6.7
C. Abdominal hysterotomy	3	20.0
D. Spontaneous delivery (assisted breech)	1	6.7
Follow-Up		
A. Normal puerperium	6	40.0
B. Normal puerperium, requiring one or more blood transfusions	8	53.3
C. Chorionepithelioma — diagnosis later changed to chorio-adenoma destruens. (alive and well 7 years following total hysterectomy, bilateral salpingo-oophorectomy and partial cystectomy, followed by deep x-ray therapy).	1	6.7
D. Subsequent pregnancy and delivery of normal child	7	46.7

phoblastic proliferation; (2) hydropic degeneration of the villous stroma; and (3) scantiness of blood vessels[6]. Malignant changes are possible but uncommon. The fear of malignant change is largely unjustified[4]. In this study of 15 cases seen during the period of 1942 through 1953, only one case showed malignant tendencies. After careful studies the diagnosis of that one case was changed from chorionepithelioma to that of chorioadenoma destruens[5], which constitutes the itermediate group between the benign hydatidiform mole and the chorionepithelioma malignum.

Cystic enlargement of the ovaries associated with hydatidiform mole has been recognized for many years. The changes are that of multiple lutein cysts of the ovary, and occasionally a cyst may become large enough to require surgical removal, as in one case in this series. A total of 3 patients, or 20 per cent, showed cystic enlargement of the ovaries, but it is possible that a larger number went unrecognized. There will be spontaneous retrogression and disappearance of the ovarian lesion, as a rule, after the removal of the hydatidiform mole or chorionepithelioma.

Symptoms and diagnosis

All 15 patients in this series gave a history of vaginal bleeding, usually vaginal spotting and a persistent brownish discharge. A tentative diagnosis of threatened abortion was made most frequently. Careful examination of the material passed will sometimes reveal the grapelike cyst, and the diagnosis can be suspected.

The quantitative pregnancy test may be of aid in the early diagnosis of hydatidiform mole. It is of much greater aid in the follow-up studies. One must bear in mind that with high gonadotrophic hormone production at about three months gestation in a multiple pregnancy, as little as 0.05 milliliters of urine may give a positive test[4]. Also, a positive test following a negative test in the follow-up studies may indicate a new normal pregnancy.

The size of the uterus may help in the diagnosis; however, it may also be misleading. It was larger than expected in only one third of the cases.

Early toxemia occurred in 4 cases, or 26.7 per cent of the series. Severe toxemia was present in 3 cases. Since toxemia of pregnancy is a condition of late pregnancy, toxic symptoms (hypertension, proteinuria, edema, and so forth) occurring in the earlier months are suggestive of hydatidiform mole[1].

Wellen reported an incidence of 3.7 per cent of specific hypertensive disease of pregnancy as pre-eclampsia and eclampsia, in a 15 year study of 27,028 deliveries at Bellevue Hospital[7]. Only 32 cases were reported to have their onset prior to 30 weeks' gestation, giving an incidence of 0.12 per cent.

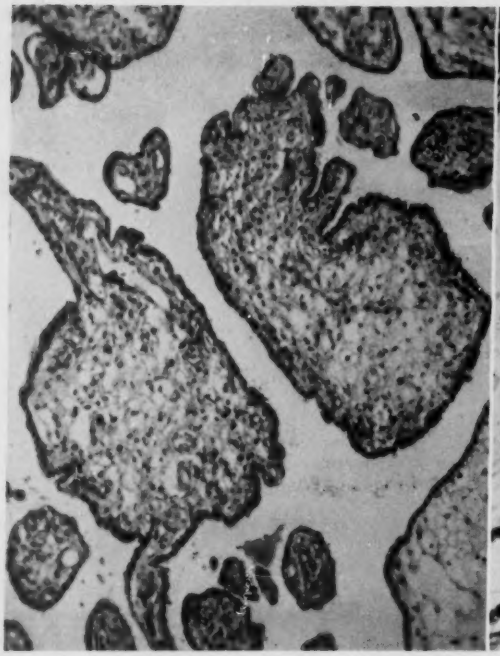


Fig. 1. Normal placenta.

Fig. 2. Hydatidiform mole.

Fig. 3. Corpus luteum hemorrhagicum of the ovary.

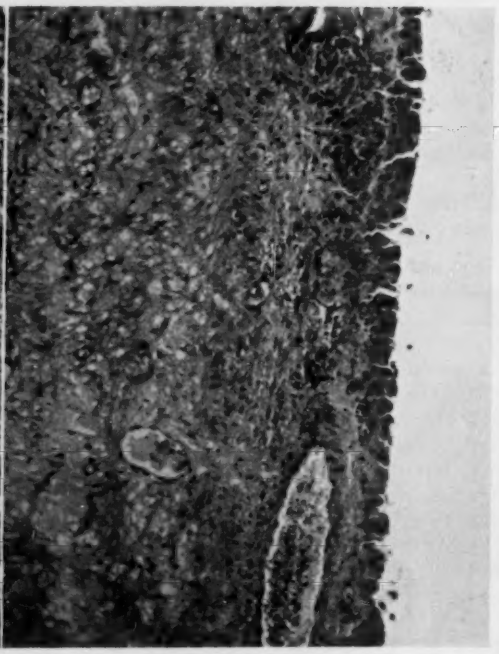


Fig. 4. Lutein cyst of the ovary.

Fig. 5. High power magnification of lutein cyst.

Fig. 6. Cross section of fetus.

Fig. 7. Roentgenogram showing gravid uterus that is much larger than would be indicated by the size of the fetus. Hydatidiform mole and hydramnios.

Fig. 8. Roentgenogram showing gravid uterus of normal size for six months' gestation. No fetal parts are seen.

If this figure is compared to the 26.7 per cent of early toxemia occurring in association with hydatidiform mole, it will show that in any case of toxemia of pregnancy in the early months, the possibility of hydatidiform mole should be investigated. Beck[8] has stated that when pre-eclampsia or eclampsia is encountered early in gestation, it is usually a complication of hydatidiform mole.

Roentgenologic evidence of hydatidiform mole was present in 4 cases, or 26.7 per cent. This examination can prove very helpful when it shows no evidence of fetal parts in a patient of five or six months' gestation.

Treatment

Ten patients, or 66.6 per cent, were treated by spontaneous abortion followed by dilatation and curettage. Three patients were treated by abdominal hysterotomy. In all 3 cases the uterus was larger than would be expected for a four and a half months' pregnancy. One patient had a massive vaginal hemorrhage which required an immediate abdominal hysterotomy. If the uterus has enlarged to more than normal for 12 weeks' gestation and the cervix is closed, and if there has not been a spontaneous evacuation of its contents, an abdominal hysterotomy is the treatment of choice. Shumann[9] and Hill[10] have pointed out some of the advantages of this approach: (1) complete removal of the whole mole is possible under direct vision; (2) macroscopic evidence of invasion of the myometrium is available, allowing immediate hysterectomy if indicated; (3) accidental perforation of the uterus is eliminated; (4) hemorrhage is controllable.

Follow-up

The follow-up showed that 6 patients had a normal puerperium, and that 8 of the 15 had a normal puerperium requiring one or more blood transfusions to correct the secondary anemia. Seven patients have subsequently become pregnant and have given birth to normal children. There has been no mortality in the 15 cases reported. One patient who had chorioadenoma destruens is alive and well seven years after surgical treatment and deep roentgen therapy.

Summary

A case of severe toxemia in early pregnancy with hydatidiform mole has been reported. Fifteen cases of hydatidiform mole have been reviewed and analyzed.

All patients have been followed, and there have been no maternal deaths.

Toxemia of pregnancy occurred in 4 cases, or 26.7 per cent of this series.

The author is grateful to Dr. Frank Watson of the Department of Pathology, Charlotte Memorial Hospital, for preparing the microphotographs used in this paper.

References

1. Chesley, L. C., Cosgrove, S. A., and Preece, J.: Hydatidiform Mole with Special Reference to Recurrence and Associated Eclampsia, Am. J. Obst. & Gynec. 52:311-320 (Aug.) 1946.
2. Mueller, C. W., and Lapp, W. A.: Hydatidiform Mole Followed by Postpartum Eclampsia and Chorionepithelioma, with Recovery, Am. J. Obst. & Gynec. 58:133-138 (July) 1949.
3. Pigeaud, H.: Eclampsie au cours des premiers mois de l évolution d'une grosse molaire, Gynéc. et Obst. 48:470-475, 1949.
4. Alter, N. M., Homel, J. I., and Swiney, M. A.: Hydatidiform Mole, with Special Reference to Diagnosis and Follow-up: A Priminary Report of 93 Cases, Margaret Hague Maternity Hosp. Bull., 6:92-96 (Dec.) 1953.
5. Hertig, A.: Personal communication.
6. Novak, E.: Gynecological and Obstetric Pathology, ed. 2, W. B. Saunders Company, 1947, p. 487.
7. Wellen, I.: Specific Hypertensive Disease of Pregnancy; Factor Affecting Infant Mortality, Am. J. Obst. & Gynec. 64:271-280 (Aug.) 1952.
8. Beck, A. C.: Obstetrical Practice, ed. 3, Baltimore, Williams & Wilkins Co., 1942, p. 540.
9. Schumann, E. A.: Obstetrics and Gynecology, edited by Curtis, A. H., W. B. Saunders Company, vol. 2, p. 954.
10. Hill, A. M.: Hydatidiform Mole and Chorionepithelioma; Report of 2 Cases, M. J. Australia 2:7-9 (July 5) 1941.

Abstract of Discussion

Dr. Robert N. Creadick (Durham): Dr. Crowell's case report presents several interesting features. Regarding the care of the patient, it is deplorable that she was treated for only five days and then discharged from the hospital. This was in June, 1953. Apparently the recommendation of interruption of pregnancy was entertained, but the patient refused. It would be vitally important with such a patient to establish some sort of base-line as to the amount of renal damage present. A history of pyelonephritis would be expected from the report. There is no mention of the eyegrounds at this time. She had been seen by three or four doctors before she came to Dr. Crowell in July, 1953. He quite properly had her hospitalized. The patient again refused interruption of the pregnancy, and about a month later went into premature labor, presenting the placenta, with typical hydatidiform mole occupying three-fourths of its area.

It would be valuable to have some idea of what the blood pressure was in 1950 when she was delivered of the premature stillborn infant. Probably the outcome of the pregnancy actually protected this woman from further kidney damage, or perhaps even permanent residual hypertension. It would seem wise from a medical standpoint even now to evaluate this patient's vasculorenal status by quantitative albumin studies and careful examination of a highly concentrated acid urine specimen. It would not be surprising if there were still some evidence of kidney impairment.

In any discussion of toxemia of pregnancy occurring before the third trimester, careful investigation is necessary because of nephritis or pre-existing hypertension, according to McElin, Faber, and Randall. Dr. Crowell has pointed out that one might expect the uterus to be much larger than is consistent with the duration of the pregnancy. This has not been borne out by a survey of the literature. In

fact, in one series more than 20 per cent of uteri were smaller than was expected. Careful study has been going on for several years on the Pacific coast, principally under the initiation of the late Dr. Albert Mathier and continued by Holman and Schirmer. They found toxemia in only 2 per cent of their patients, but Page reported 71 per cent after the fourth month. We are indebted to Arthur Hertig for his careful study of 1,000 spontaneously aborted ova, in which 40 per cent showed molar changes. In the West Coast series, fetuses were found in association with moles only five times.

In regard to treatment, we at Duke do not feel that hysterectomy is indicated, even if a suspicion of chorionepithelioma is entertained. Nor do we think there is any indication for oophorectomy, even in the presence of associated lutein cysts. Quantitative studies of the pregnancy reaction should certainly be carried out for at least four to six months after passage of a mole. In our experience no valuable information or prediction may be made purely on the basis of spinal fluid pregnancy tests, whether positive or negative. Prevention of a superimposed pregnancy when a patient has once passed a mole is most certainly advisable, and the patient should be so instructed.

I would like to ask Dr. Crowell his interpretation of the three blood pressure readings within normal range, from July to August 6, 1953, prior to his patient's rehospitalization. We have recently discussed this phenomenon with our internist, who says it is an ill omen.

Dr. C. W. Brown (Charlotte): This case is more interesting to me than to the other members of this group, since I happen to be the one who attended the patient during her first hospitalization. I feel compelled to defend myself with regard to Dr. Creadick's criticism of the five-day hospitalization. I would like to explain that the case is primarily a problem in socio-economic relations. The patient was seen on the first of June. The abortion did not occur until the last of August. For three months she had been treated for severe toxemia. She belonged to a fanatical religious sect, and I knew that it would be impossible to keep her in the hospital more than a few days. In fact, she wanted to go home the next day.

After due consultation with the members of our group, it was decided that this patient needed a hysterotomy. Since she happened to be in a Catholic hospital, we made arrangements to transfer her to another hospital for this procedure. She and her husband refused this recommendation. She then went to another doctor who tried for some time to get her blood pressure down before Dr. Crowell saw her. He knew she had been in fairly competent hands and that a hysterotomy had been recommended. Only then, and through luck, did she get into the hands of Dr. Crowell and obtain the proper treatment. These hospitalizations and consultations with different doctors must have cost the patient heavily. If we could treat patients like selling automobiles or measuring cloth over the counter, it would be a different story.

Dr. A. L. DeCamp (Charlotte): I want to suggest the possibility of this patient's having had a twin pregnancy. I once treated a patient who had mild toxemia. After eight months of pregnancy she went into labor and gave birth to a living pliable, healthy infant. The placenta was half a hydatidiform mole and half a normal placenta. A twin pregnancy might have been the explanation. There would be no way of determining the truth now.

I also want to comment on the infrequency with which these moles undergo malignant degeneration. In the last two years, I had a patient who was hospitalized for more than five days and who finally presented a mole. Subsequently symptoms developed in her chest, and she had an x-ray diagnosis of chorionepithelioma metastasis to the lungs. Her family was prepared for her early demise. Through nothing that I nor the medical men did, she recovered, and the condition cleared up. Eventually she began to menstruate, and is now apparently in the midst of a normal pregnancy.

Dr. W. Z. Bradford: In 1942 we presented 2 cases of hydatidiform mole at the South Atlantic meeting in Greensboro. One of the patients had marked toxemia. She was in the fourth month of pregnancy. Another had chorionepithelioma. Hysterotomy disclosed that this patient had a virtually complete penetration of the uterine wall. She had lutein cyst the size of a grapefruit. I doubt that removal of the cyst is hardly ever necessary, since after the mole is cured or removed, the cysts will regress.

In spite of the penetration of uterine wall, the patient subsequently had three children. Ten of the cases in Dr. Crowell's series were early spontaneous abortions. The incidence of toxemia associated with hydatidiform moles was listed at 26 per cent. If the moles were of three or four months' duration, the incidence of toxemia would probably be 66 instead of 26 per cent.

The question of malignancy is tremendously interesting and baffling. In the 16 cases, there was no malignancy. This is quite fortunate, since the literature reports its incidence as ranging from 2 to 16 per cent. Of course the series is too small to be statistically significant.

The patient with chorioadenoma destruens aborted and presented molar tissue in the past products of conception. A follow-up examination disclosed a mass in the pelvis, hard and rapidly growing. On operation, which lasted for four hours, molar tissue was removed from around the right urether, half the bladder and the tubes, and the ovary were removed. The patient lived, and the diagnosis of chorionepithelioma was changed to that of invasive mole.

Nutrition and Food. Formerly our food habits were the result of tradition, of racial and personal tastes and, in national crises, of **force majeure.** Our new knowledge leaves the diet to many of us more or less unchanged, because we can get so much, and such varied, food that the nutritionists' ideal — a "balanced diet"—is amply preserved. But to many others, and specially when some important foods are in short supply, the new knowledge is very helpful, that is, if we have the sense to acquire it.—Horder, L.: Fifty Years of Medicine, New York, Philosophical Library, 1954, p. 23.

Furacin Brings Symptomatic Improvement

In a report on approximately 400 cases of urethritis treated with Furacin urethral suppositories, Dr. Vernon H. Youngblood, Cabarrus Memorial Hosuital, Concord, North Carolina, noted symptomatic improvement "as early as 1 day after beginning treatment." He added that "the average period of treatment is 13 days." His results are reported in the *Journal of Urology* (70:926 (Dec.) 1953).

Dr. Youngblood found that the use of Furacin suppositories "requires a minimum of office visits, does away with the pain of urethral dilatations and silver nitrate applications . . . The patient can easily use the medication at home herself."

The suppositories contain Furacin 0.2 per cent with the topical anesthetic diperodon hydrochloride 2 per cent in a water dispersible base.

OBSTETRIC ANALGESIA AND ANESTHESIA

RICHARD L. PEARSE, M.D.
ELEANOR B. EASLEY, M.D.
and
KENNETH A. PODGER, M.D.
DURHAM

This paper is an attempt to present the development of our views concerning the relief of the discomfort and anxieties of childbirth. There are two definite and distinct phases in this development. From 1946, when our group had its start, our aim was to give the majority of our patients a complete amnesia once labor was well established. A few hardy souls demanded caudal anesthesia. We used a fair amount of general anesthesia, but more and more embraced conduction block anesthesia to avoid fetal anoxia. When a third partner joined us in July, 1949, the second phase started and has continued up to the present. He was an advocate of natural childbirth. By his enthusiasm and success he made the conservative and somewhat complacent members of the group aware of the real advantages of giving pregnant women some insight into their condition and of providing maximal emotional support and reassurance during labor. We all agreed on the advantages of conduction block anesthesia, and have rarely employed general anesthesia during the second phase. We feel that women of every social stratum respond to being treated as rational beings rather than as children. We also feel that no methods of analgesia or anesthesia which interfere with the actual physiology of labor should be used. The era of "twilight sleep" and its modifications was the result of fallacious reasoning, and has been a curse. The obstetrician's objective should be to deliver a healthy baby to an undamaged mother. The substitution of other objectives, such as the production of amnesia, is bad.

Materials and Method

This study covers two three-and-a-half-year periods. The first—from January, 1946, to June, 1949—was the epoch of heavy sedation during labor, and some general anesthesia. The second—from July 1949 to 1952—was the period of insight and emotional support, and almost exclusive use of conduction block anesthesia. Only private patients who had received prenatal care are included. Emergency consultations and manipulations done by other practitioners are excluded. The term "primigravida" is used in reference to women whose genital tract was unmodified by previous pregnancy; "multigravida" to those whose genital tract was modified by a pregnancy of any sort or state of development. We mention these details not to be arbitrary, but merely to report accurately our results. Since the work was done entirely by our group and since the records are *fairly* accurate, a reasonably well controlled series can be reported. The smallness of our practice somewhat restricts, of course, the statistical validity of the study.

During the first period we used Demerol and hyoscine according to the Boston Lying-In technique. When a primigravida measured 4.0 to 5.0 cm. dilated, and when a multigravida was fairly in labor we started her on the following regimen:

Demerol, 100 mg. given intramuscularly; hyoscine, 0.6 mg. given intravenously; in 30 to 45 minutes — hyoscine, 0.45 mg. given intravenously; in an hour—hyoscine, 0.3 mg. given intravenously and repeated every two hours if necessary; in an hour—Demerol, 100 mg. given intramuscularly and repeated every three hours, if necessary.

Needless to say, we reduced most patients to a state of complete insensibility. They lay in a stupor, bathed in their own secretions. With each contraction they rolled, muttered, and clutched their vulvae. A few had uncontrollable mania; all required considerable watching. At that time terminal spinal anesthesia consisted of 50 mg. of Novocain given with the patient on her side. Caudal analgesia was given according to Hingson's recommendations and with the usual precautions to avoid intrathecal leak and hypotension. Our tendency was to prolong the process and make it serve for analgesia in the first stage, with resultant interference of the physiology of labor. Conventional local and pudendal block were used very rarely.

With the dawn of the second era a number of our patients demanded natural childbirth. These were largely faculty and doctors' wives from Chapel Hill and Durham.

Read before the Section on Obstetrics and Gynecology, Medical Society of the State of North Carolina, Pinehurst, May 4, 1954.

The excellent results obtained by our new partner and the postpartum euphoria of these patients were impressive. Although the number of enthusiasts requesting natural childbirth in its unadulterated form was not great, it became evident that the principles of education and insight, emotional support, and allaying of anxiety were capable of general application, regardless of the technical details of the management of labor and delivery. Classes were held and movies were shown to give all the patients some understanding of the anatomy and physiology of pregnancy and childbirth. Patients were encouraged to ask questions during the classes and prenatal visits. We have in our group the advantage of a woman member with a special flair for discovering and allaying the anxieties of our patients. We made every effort to avoid making the patients feel foolish because of their questions, however trivial or time-consuming.

During labor the use of amnesic drugs was avoided. Demerol and Nisentil were used during the first stage. Self-administered Trilene proved safe and flexible for analgesia. We tried to adapt realistically the analgesia to the patient's emotional demands during labor. We never under any circumstances withheld what the patient needed to maintain her self-possession, and did not try to shame her into achievement. We learned that conduction block anesthesia, in order to be safe and effective, must be truly terminal. Saddle block cannot safely be used for analgesia, as Adriani pointed out as early as 1947, in his discussion at the Congress in St. Louis. We gave up entirely the use of hyperbaric solutions and more toxic agents, and, with the patient in a sitting position, routinely gave 50 mg. of Novocain in 1 cc. of cerebrospinal fluid without barbotage, then had her lie flat immediately with her head on a doubled pillow. The effect was almost immediate, and usually gave consistent anesthesia for from 40 to 90 minutes. With this dosage and method the use of vasoconstrictor drugs was found unnecessary. Caudal analgesia we used mainly for premature deliveries and multigravidas, particularly those known to have rapid labor. We tried always to avoid using it for longer than two hours, and usually made it a somewhat terminal affair. The advent of Xylocaine and spreading agents made the administration of pudendal block a far more certain and satisfactory procedure. The only disadvantage seemed to be the time required—almost 20 minutes—for a block to exhibit its maximum effect.

Results

Infants weighing less than five pounds

As the survey progressed, it was obvious that any resumé of our use of analgesia and anesthesia would become a sort of general confession of our practice. Our sins of omission and commission were rather sharply revealed. Between 1946 and June, 1949, we delivered 80 babies weighing less than 5 pounds each. Twenty-six of these babies were stillborn or died during the neonatal period, a mortality rate of about 32.8 per cent. About 71 per cent of these babies were delivered under conduction block anesthesia. From July, 1949, to 1952, 69 babies weighing less than 5 pounds each were delivered. Sixteen died in the neonatal period or were stillborn, a rate of about 23.1 per cent. About 85 per cent were delivered under conduction block anesthesia.

We felt that this series was too small to have statistical validity, and the percentage of improvement in the second period was not significant. Methods for delivering premature infants certainly can stand improvement. Incidentally, the percentage of premature babies was essentially the same for both periods, about 5 per cent for the first and 4 per cent for the second.

Infants weighing more than five pounds

The main studies have been devoted to babies weighing more than 5 pounds, delivered during these periods. From 1946 to June, 1949, a total of 1300 babies weighing more than 5 pounds each were delivered. Six hundred and twelve were delivered from primigravidas and 688 from multigravidas. Eighty-six per cent of the primigravidas and 69 per cent of the multigravidas were delivered under conduction block anesthesia.

From July, 1949, to 1952 a total of 1,626 babies were delivered. Six hundred seventy-nine were born of primigravidas and 947 of multigravidas. Ninety-one per cent of the primigravidas and 88 per cent of the multigravidas were delivered under conduction block anesthesia.

Table 1 gives the frequency of the use of various agents for relief of discomfort during the two periods. All that these figures show is that we were just about giving up

Table 1
Analgesic Agents
Demerol and Hyoscine
1946—June 1949

Classification of Patient	Anesthesia	No.	Per Cent
Primigravidas	General	75	87.0
	Conduction block	413	78.5
Multigravidas	General	147	68.6
	Conduction block	225	47.4
	July 1949—1952		
Primigravidas	General	13	22.4
	Conduction block	139	24.4
Multigravidas	General	55	48.6
	Conduction block	98	11.7
	Trilene		
	July 1949—1952		
Primigravidas	General	11	18.0
	Conduction block	185	29.7
Multigravidas	General	39	34.5
	Conduction block	197	23.6

the use of hyoscine during the second period.

Table 2 gives the number of the various conduction block anesthesias used during the two periods. No permanent damage of any description has been encountered in this study. The most troublesome complication has been headache following the use of saddle block and spinal anesthesia. We are not prepared to report on the exact incidence at present, as we feel our data are not altogether accurate. There was occasional opposition on the part of the patient, but as word spread patients began to request saddle block. By carefully observing Hingson's injunction to give a small test dose and wait 5 or 10 minutes, we never had a serious intrathecal leak of the caudal agent. A few cases of hypotension were controlled by posture and oxygen. No authenticated case of sensitivity to an anesthetic agent was encountered during either period.

The validity of our methods was then tested by a scrutiny of the neonatal deaths and stillbirths, and the number of babies who failed to breathe and cry immediately upon birth during the two periods. The incidence of sections, rotations, mid-forceps, versions and breech extraction, we felt, were added tests of our methods. These will be briefly reported, with the intention of giving more extensive reports on these procedures later. We felt that the ratio of low forceps to spontaneous deliveries would be interesting but not significant, since one member of the group was very fond of low forceps, another favored the biologic approach, and another occupied middle ground.

Neonatal deaths and stillbirths

From 1946 to June, 1949, we had a neonatal death and stillbirth incidence of 1.38 per cent. There were 9 neonatal deaths and 9 stillbirths. From July, 1949, to 1952 we had an incidence of only 0.74 per cent, or almost half that of the first period. We are of the opinion that this improvement was statistically significant. There were 7 neonatal deaths and 5 stillbirths during the second period. In tables 3 and 4 these facts are briefly summarized. Three of these losses probably could have been avoided by performing a section. One was the neonatal death following a prolonged labor; the other 2 were stillbirths resulting from difficult breech extractions. The other deaths could not be correlated with traumatic delivery.

The most disheartening losses are the unexplained intrapartum deaths under apparently optimal circumstances. Although the pathologists say these deaths occur because of separation of the placenta, only once did the placenta follow the baby's heels. That occurred in a patient who had been given 1 minim of Pitocin to stimulate labor after a period of stalling. All these babies were subjected to postmortem examination.

Cesarean sections

From 1946 to June, 1949, our gross section rate was 2.2 per cent, and primary rate 1.3 per cent. From July, 1949, to 1952 our gross section rate was again 2.2 per cent, but the primary rate was only 0.5 per cent. Again

Table 2
Types of Conduction Block Anesthesia
1946–June 1949

	Caudal	Spinal	Saddle Block	Local	Continuous Spinal
Primigravidas	78	405	17	10	9
Multigravidas	179	220	34	19	11
	July 1949–1952				
	Caudal	Spinal	Saddle Block	Local	Continuous Spinal	Novocain Saddle Block
Primigravidas	25	224	124	80	3	166
Multigravidas	163	156	209	108	15	180

Table 3

Summary of Neonatal Deaths and Stillbirths

1946–June 1949

Neonatal Deaths

Case	Cause of Death and Complicating Conditions	Time of Death	Birth Weight lbs.	Birth Weight oz.	Maternal Factors	Obstetric Factors
1	Meningocele; deformity					
2	Cerebral hemorrhage		5	1	Para 3-0-3; induced for toxemia	Spontaneous delivery under general anesthesia
3,4	Congenital heart condition					
5	Asphyxia	1 hour after delivery	7	2		Spontaneous delivery under local anesthesia
6	Uncertain; Postmortem showed no hemorrhage	5 hours after delivery	10	12	Para 0-0-0	Kielland rotation under spinal anesthesia; (first stage 108 hours, second stage, 4 hours, 10 minutes); cesarean section should have been done
7	Uncertain; postmortem showed slight atelectasis	6 hours after section	6	6	Para 0-0-0; elderly primipara obesity, hypertension myoma	Elective section under ether
8	Atelectasis, polydactylism, epigastric hernia, absence of gallbladder	12 hours after delivery	6	9	Para 0-0-0	Low forceps delivery under spinal anesthesia
9	Undetermined; postmortem unrevealing	2 minutes after breathing and crying at birth	6	3		Breech extraction; infant first of twins
Stillbirths						
1,2,3	Maceration					
4	Asphyxia; true knot in cord		5	4		Spontaneous delivery under gas oxygen anesthesia
5	Unexplained by postmortem	Intrapartum	6	4		Spontaneous delivery under local anesthesia and ether
6	Death due possibly to short cord; postmortem unrevealing	Intrapartum	6	7		Spontaneous delivery under caudal analgesia
7	Unexplained	Intrapartum	5	0		Spontaneous delivery without anesthesia
8	Asphyxia				Para 1-1-0	Difficult breech extraction under ether, caudal analgesia; cesarean section should have been done

we feel that this, like the drop in neonatal deaths and stillbirths, was significant. Table 5 gives the indications for which we performed primary sections during the two periods. All others were repeat sections.

We have been greatly interested in noting that all great clinics report a much higher section rate on the private services. Everyone seems to swallow this fact without a grimace. Private patients are usually taller, better nourished, and more capable of attaining insight and rising to demands than are service patients. Their intelligence is usually, but not invariably, higher than that of service patients. Fewer obstetrical catastrophes requiring emergency consultation occur on the private service. Conversely, the babies of service patients are as precious and are entitled to exactly the same consideration as are those of private patients.

What is the answer? Can those in the upper brackets buy more medical care than is good for them? An ex-debutante or Junior Leaguer, treated with kindness and given in-

Table 4

Summary of Neonatal Deaths and Stillbirths

July, 1949–1952

Neonatal Deaths

Case	Cause of Death and Complicating Conditions	Time of Death	Birth Weight lbs.	Birth Weight oz.	Maternal Factors	Obstetric Factors
1	Atelectasis and cerebral hemorrhage		6	11	Para 4-3-1	Spontaneous delivery under saddle block anesthesia
2	Intracranial hemorrhage; atelectasis with hyaline membrane	8 hours after delivery	6	1½	Para 0-0-0	Difficult decomposition and extraction under ether (LSA); first stage, 41 hours 30 minutes; second stage, 1 hour 5 minutes; ceasarean section should have been done
3	Meningocele; polycystic liver and kidney; malformed stomach					
4	Congenital heart condition; coarctation of aorta					
5	Atelectasis, hyaline membrane	36 hours after delivery	6	8	Para 2-0-2	Repeat laparotrachelotomy under continuous spinal anesthesia
6	Congenital atelectasis with hyaline membrane	24 hours after delivery	5	2	Para 0-0-0	Spontaneous delivery under spinal anesthesia; gas oxygen analgesia
7	Congenital atelectasis with hyaline membrane; agenesis of pituitary gland; hypoplasia of adrenal glands	9 hours after section	6	4	Para 1-0-1	Repeat elective Waters' section under caudal analgesia

Stillbirths

1	Unexplained; postmortem unrevealing		5	13	Para 1-0-1	Delivery by low forceps as fetal heart beat was lost; delivery was imminent and patient was already under saddle block anesthesia
2	Maceration; death due partly to Rh sensitization in mother				Primigravida; Rh sensitization by previous transfusion	
3	Maceration; cause of death unknown					
4	Postmortem showed hypertrophy of pancreatic islets and horseshoe kidney	Intrapartum	6	12	Para 0-0-0; severe diabetes	Spontaneous delivery under local anesthesia; Demerol and hyoscine
5	Asphyxia shown at autopsy; premature separation of the placenta		7	3	Para 5-0-5	Kielland rotation and extraction under spinal anesthesia; Demerol and hyoscine

sight and emotional support, will use her capacity to "bear down" as diligently and with as much fortitude as Rosie O'Grady. We have always considered the capacity to bear down a precious one, to be cherished, not interfered with by heavy sedation, caudal, premature spinal, or saddle block anesthesia. The perineal reflex, properly encouraged, may make the difference between an easy delivery and a traumatic one, or between a section and no section.

Delayed breathing

Another test of the validity of our methods was to be found by studying the number of babies that were slow to breathe and cry. Table 6 gives the numbers and percentages. Our faces were red, because it looked as if

Table 5

Analysis of Primary Sections
1946–June 1949

Indications	No. Cases
Primigravidas	
Disproportion (1 LMT 1 LST)	6
Inertia	3
Inertia and disproportion	2
Placenta previa	2
Myoma hemorrhage	1
Myoma, obesity, and hypertension	1
Multigravidas	
Disproportion	2
July 1949–1952	
Primigravidas	
Inertia	2
Inertia, disproportion	2
Disproportion	1
Multigravidas	
Disproportion	1
Transverse lie in bicornate uterus	1
Placenta previa	1

we had had better results under the Demerol and hyoscine regimen. This table lists the babies who did not breathe or cry immediately on birth. During the second period we tried a number of synthetic analgesics without hyoscine, and our impression was that one agent seemed to delay fetal respiration. Since these studies are incomplete and we wish to avoid doing an injustice to the manufacturer of this product, we do not elaborate at present. At least we can safely say that conduction block is superior to general anesthesia.

The incidence of inertia further tests our methods. Under the regimen of emotional support there was a definite drop, as shown in table 7. The incidence of breech presentations was about the same for the two periods, in spite of our policy to do external versions whenever possible. For the first period the incidence among primigravidas was 4.7 per cent, among multigravidas 2.4 per cent; and for the second period, 3.9 and 2.3 per cent respectively. The neonatal mortality and stillbirth rate for breeches during the first period, however, was 4 per cent and during the second, 2 per cent.

Traumatic procedures

Concerning potentially traumatic procedures, we made some very elaborate tables which we will summarize to avoid tedium and confusion. During the first period the incidence of Kielland rotations for primigravidas under conduction block was 2.6 per cent. For the second period the incidence rose to 4.8 per cent, a rise which we feel was due to the occasional, ill advised use of

Table 6

Babies Who Did Not Cry or Breathe Immediately
1946–June, 1949

Patient	Type of Anesthesia	No.		Per Cent
Primipara				
	General	22 out of	86	25.6
	Conduction block	16	526	2.9
Multipara				
	General	24	214	11.2
	Conduction block	11	474	2.3
July 1949–1952				
Primipara				
	General	12	58	20.6
	Conduction block	14	621	7.4
Multipara				
	General	14	113	12.3
	Conduction block	34	834	4.0

Table 7

Incidence of Inertia

	1946-June, 1949		July 1949-1952	
Primigravidas in labor longer than 18 hours	No.	Per Cent	No.	Per Cent
General anesthesia	25	29	11	18
Conduction block	122*	23	112	18
Multigravidas in labor longer than 12 hours				
General anesthesia	34	18	17	15
Conduction block	77	16	91	11

*In this group, 1 baby was slow to breathe.

caudal anesthesia on primigravidas. For multigravidas under conduction block anesthesia, the incidence of Kielland rotations was 6.9 and 5.9 per cent respectively for the two periods. The use of mid-forceps for primigravidas was 1.5 per cent for the first period, 0.9 per cent for the second. Among multigravidas the use of mid-forceps was 0.4 and 0.1 per cent.

Version and extraction has been almost entirely abandoned by our group. During the first period only 5 versions were done, all under deep ether anesthesia on primigravidas. Three were done under conduction block on the second of twins, and 2 babies were so delivered from multigravidas under general, and 1 under conduction block. During the second period, or period of enlightenment, only 3 versions were done, all on the second of twins of primigravidas under conduction block anesthesia. We regard version and extraction as a valuable procedure for Ambrose Paré, but not so valuable in modern obstetrics.

Among the babies delivered by major obstetric procedures, reluctance to breathe was not a problem. There were 7 such cases during the first and 4 during the second period of our practice. During the first period the

ratio of low forceps to spontaneous deliveries was 6 to 5, for the second period 5 to 9. Since the neonatal mortality is the same for low forceps and spontaneous delivery these ratios may not be too significant, but are indicative of our somewhat more physiologic approach.

Conclusion

We have concluded that treating women as rational human beings, giving them insight into pregnancy and labor, and providing maximum emotional support during labor pays dividends in maternal safety and fetal salvage. We feel that heavy sedation and amnesic drugs have no place in modern obstetrics, and that meticulous and selective use of conduction block anesthesia, although not ideal, is safe.

Discussion

Dr. Harvey C. May (Charlotte): In his usual erudite manner Dr. Pearse has outlined for us a program of obstetric analgesia and anesthesias employed by him and his associates. They have placed the emphasis upon education of the mother, maximal emotional support, as little sedation as possible without amnesic drugs, and the use of terminal conduction anesthesia. They are due a great amount of admiration for their courage in opposing a system of analgesia and anesthesia which has been well accepted by the profession, and particularly by the pregnant woman, ever since Von Steinbuckel first employed "twilight sleep" in 1902. All of us have had the annoying experience of being told by a patient, on her first visit, that she wants to be assured that she will have no pain. She makes no mention of the proper care of herself or of the safe delivery of her expected child. I do not feel that these women are particularly selfish, but that they do not understand the dangers of analgesia and anesthesia. It is here that education of the mother is of particular value. I question, however, that we can convert an emotional immature child into a mature woman in a matter of a few short months.

I do object to the use of the term "natural childbirth," and I have yet to be convinced that moderate sedation or even amnesia interferes with the physiology of labor, and certainly no more than does conduction block anesthesia unless it is absolutely terminal. Dr. Pearse wants his ex-debutantes and Junior Leaguers to "bear down." I can see no advantage in having the patient wear herself out during the first stage of labor, and would like to ask Dr. Pearse of what benefit this effort is when the patient is delivered under caudal or some form of spinal anesthesia.

The author's statistics on stillborn and neonatal deaths, are simply magnificent. He has quoted a combined neonatal death and stillborn percentage of only 0.74 per cent. One can not dispute the success of his group when judged in these terms. For comparison, I secured the figures for the years 1950 through 1953, inclusive, at the Presbyterian and Charlotte Memorial Hospitals. In the former hospital, in which 6,083 deliveries were performed, the total uncorrected stillborn figure was 1.4 per cent, and the uncorrected neonatal deaths 1.7 per cent. At the Memorial Hospital, where 5,146 deliveries were performed, the stillborn percentage was 1.78 per cent and neonatal deaths 1.75 per cent. In each of these institutions the total uncorrected fetal loss was in excess of 3 per cent, and the vast majority of these deliveries were performed or supervised by qualified men. Likewise, the vast majority of these infants were delivered under sedation and general anesthesia.

One cannot overlook the safety of the mother in evaluating this method of analgesia or anesthesia. Drs. Pearse, Easley, and Podger report no maternal catastrophe. There can be no doubt that under general anesthesia the aspiration of stomach contents is a great possible danger, particularly when barbituates have been employed and the cough reflex is further abolished. Having been trained in New Orleans, I can only applaud the use of some form of conduction anesthesia for delivery. May I congratulate Drs. Pearse, Easley, and Podger again for their courage and for showing us what can be done by education and emotional support of the mother. To quote Dr. Isadore Dyer: "Although one cannot fully subscribe to the psychological approach of Grantley Reid, there must exist a mode between this and the common practice of forced coma in labor. If one errs, a better result will be the rule, if that error is on the conservative side."

Dr. Pearse (closing): We do not have the patients bear down until they are fully dilated. We find that a patient under carefully given low caudal and or saddle block can use her voluntary muscles of expulsion with some degree of effectiveness. The peritoneal reflexes are abolished and the patient has to be coached, but a surprising amount can be accomplished by standing by and encouraging the patient. If a reasonable amount of coaching does not lead to spontaneous delivery, we perform an easy low forceps delivery without a qualm of conscience.

Advances in surgery: Surgery, as practised today, has become such a familiar experience in the life of the community that it is difficult to realize that it is the result of a rapid evolution during only two generations of doctors. Up till the middle of the last century the whole field of surgery was severely limited by three great obstacles—pain, haemorrhage and sepsis. The discovery and exploitation of anaesthetics removed the first handicap, the introduction of the ligature greatly diminished the second. The elimination of the third great obstacle to surgery, sepsis of the tissues about the wound, or "putrefaction," as it was formerly termed, was a much slower business. It did not depend upon a chemical or a physical discovery, it was the result of a patient and persistent pursuit of an idea born and bred in the mind of Joseph Lister. Inasmuch as the whole of the surgery of today is the child of Lister's conception that sepsis results from contamination of tissues exposed by the surgeon's knife to living microbes—and this conception lay at the root of all his painstaking work throughout a long and epoch-making life—Lister has been justly called the "father of modern surgery."

To the genius of one man more than any other Lister owed a tremendous stimulus in the pursuit of his investigations and in the confirmation of his views. This was Louis Pasteur, with whom, over many years, he corresponded freely. Pasteur's experiments and discoveries formed an ultimate basis for, and a justification of, Lister's efforts. The cordiality of the relations between the two men, and their mutual respect and affection, provide a unique chapter in the history of medical science and of humanism.—Horder, L.: Fifty Years of Medicine, New York, Philosophical Library, 1954, p. 14.

THE INTERRELATIONSHIPS BETWEEN PSYCHIC AND PHYSICAL FACTORS IN THE PRODUCTION OF MENTAL ILLNESS IN THE AGED

ROBERT H. BARNES, M.D.
EWALD W. BUSSE, M.D.
and
ALBERT J. SILVERMAN, M.D.
DURHAM

Mental disorders in the elderly have, until recently, remained largely outside the "body image" of modern psychiatry, excluded from consciousness as a paretic extremity, as a dead weight which could contribute little to our knowledge of the human mind. And so these illnesses were left to the general practitioner, the cardiologist, and ultimately to the pathologist, and to the latter only if some special interest in tumors or other peculiarities of the aging body prevailed. Like that of the nineteenth century alienist, our only role and interest was in completing the necessary papers for commitment, after a brief examination of the elder had revealed the usual picture of senility—in our minds, a picture caused purely by organic, readily demonstrable changes in human cerebrum.

Then, for various reasons and from various areas, came indications that this concept was not in accordance with the facts, and we soon found that more was expected of us as psychiatrists when dealing with the disturbed oldster than a knowledge of commitment procedures. From the medical side, as the treatment of congestive heart failure improved, many noted that the supposedly unalterable picture of senility could frequently be dramatically reversed with digitalis, diuretics, and salt-free diets. The reversibility of what often appeared to be senile psychotic disorders with niacin[1] led some to develop a less stereotyped and inflexible view. Thus the personal experiences of many physicians suggested that mental diseases of the aged were not the ultimate and unchangeable stigmata of old age. And psychiatric physicians began to take a more charitable view and to realize that explorations into the emotional problems of the elderly did not always lead to a therapeutic blind alley. Abraham[2], in the early days of the century, suggested that even deep insight therapy was possible in elderly people. The advent of electroshock therapy, and the discovery of special techniques allowing for its safe administration even to the "poor-risk" patient, made possible the successful treatment of the depressed old person[3].

From other groups, too, came suggestions that old age and its psychologic reactions were a fitting field for more than morphologically oriented thinking. Sociologists[4] began to suggest that social activities and lifelong personality factors played an important role in determining the mental status of the old person. World War II brought increased interest in the elderly worker, whose contribution to the war effort was great, and in the postwar era rehabilitation and interest in the chronically ill and aged became epitomized in Howard Rusk's concept of the "Third Phase of Medicine."[5] Thus we were urged to think and work in this previously abandoned area.

Many years ago, in studying the psychologic patterns of response in general paresis, Paul Schilder[6] pointed out that " . . . the boundaries between the organic and psychogenic seem to be not very sharply drawn even in such conditions as paresis." This was well demonstrated in the pioneer work of Rothschild and his associates[7] with psychotic conditions in the elderly. One of his titles is illuminating—"The Origin of Senile Psychosis: Neuropathic Factors and Factors of a More Personal Nature." Briefly summarized, he attempted to correlate autospy findings with the psychiatric picture. In general he was unhappy with the poor correlation between the pathologic and the clinical findings. Many cases with advanced clinical features of senility were largely free of parenchymatous pathologic changes, and conversely many people who functioned well psychically until death demonstrated rather marked senile arteriosclerotic brain changes. Thus the techniques of pathology made only a very limited contribution to our understanding of the psychology of normal and pathologic aging. The same may be said of the physiologic studies of cerebral circulation and metabolism. While the cerebral blood flow and the cerebral metabolic rate both decrease with age, their relation to both normal and pathologic aging is not clear[8].

Read before the Section on Neurology and Psychiatry, Medical Society of the State of North Carolina, Pinehurst, May 5, 1954.

From the Department of Psychiatry, Duke University.

This investigation was supported by a research grant from the National Institute of Mental Health of the National Institute of Health, United States Public Health Service.

Thus it more and more appears that an understanding of the psychologic and psychiatric problems of aging must come from a consideration of more than physical changes in the nervous system or in the body elsewhere. Yet these physical changes cannot be ignored, either in their direct effects on the psyche or in indirect effects as they influence the aging person's concept of self —his "body image." In no area of medicine are we in more need of a multi-dimensional and a multi-discipline approach to both clinical and research problems. No area of medicine is more properly to be considered "psychosomatic" in the broadest sense. Such studies may never make it possible for the average person to function in his 70's as have Bernie Baruch or Alben Barkley, but they may make it possible to keep many of ourselves and our contemporaries out of the same state hospitals where more and more of the Baruch-Barkley generation have ended their days.

Method and Material

Our own interest in elderly people came about through attempts to interpret the unusual electroencephalographic patterns we frequently found in people of 60 or over. Therefore, we instituted a program, and in three years the authors studied a total of more than 250 individuals of 60 years and over. Our own interests, as well as the need to know a great many things regarding each individual subject that we were using as electroencephalographic controls, soon caused us to expand our efforts into a more extensive study of the aging processes. Two large groups, all persons of 60 years and over, and divided into a *Senile Group* and a *Community Group*, have been studied as follows: (1) careful medical, social, and psychiatric history; (2) complete physical and neurologic examination; (3) routine psychiatric mental status evaluation; (4) complete blood counts, serology, urinalysis, blood sugar and nonprotein nitrogen; (5) electroencephalography; (6) psychologic testing, including the Rorschach, Wechsler-Bellevue, and Weigl Color-Form Sorting Tests. The electroencephalographic tracings were made on 8-channel Grass instruments. The *Senile Group* was composed of recently hospitalized persons, placed in a psychiatric hospital because they were no longer able to function on the outside. People with complicating vascular accidents and other neurologic lesions were excluded. The *Community Group* was recruited from three sources: (1) The outpatient facilities of a large university clinic; (2) volunteers from the community who came to us in answer to our direct appeals for subjects (these were all retired individuals); (3) another group of volunteers who were still active in their life's work (this included a sizable number of elderly doctors). All persons in the *Community Group* were without evidence of vascular accidents or other complicating neurologic lesions. Also, none had physical disabilities known to affect central nervous system functioning.

Results

These have been published and presented[9] elsewhere and will only be summarized here to the extent that they are pertinent to the title of this paper:

(1) The *Senile Group* revealed the highest percentage of both diffuse and focal electroencephalographic abnormalities, with only 20 per cent of the subjects demonstrating what could be considered as normal electroencephalograms. Our electroencephalographic definition of normal is somewhat more liberal than for younger adults, requires the dominant rhythm to be within the 8-12 per second range, but does allow for some scattered activity within the 6-8 per second range. In the *Senile Group*, 64.5 per cent had demonstrable generalized dysrhythmias of variable degrees of severity.

(2) At the other end of the spectrum, as far as function is concerned, was the group of elderly people still employed. Here, 61 per cent had electroencephalograms which were within the normal category.

(3) In between were those in the *Community Group* who were retired and obtaining medical care in the University Outpatient Clinic. In this group only 44 per cent had electroencephalograms which met our criteria for a normal classification.

(4) The outstanding electroencephalographic finding in the *Community Group* as a whole was the relatively high percentage of focally disturbed records. These constituted over one third (37 per cent) of the total, and ranged in severity from minor focal slowings to very severe spike and spike and delta foci. The majority of these occurred in records without other evidence of abnormality. With one exception, these foci were

temporal in location, and 8 out of 10 were located on the left. This could not be correlated with handedness or eye dominance.

(5) When the psychologic test results were correlated with the electroencephalographic findings, it became clear that those, irrespective of groups, with diffusely abnormal electroencephalograms functioned intellectually at a much lower level than those having either normal records or only focal disturbances in their tracings. Interestingly, the focal disturbances did not correlate with any intellectual or emotional features discernible in the psychologic test data.

(6) Those persons within the *Community Group* who continued to work had somewhat higher intelligence quotients and more activities and outlets in addition to their work. Depressive episodes were much less common in those who worked, and hypochondriacal preoccupation was less frequent.

(7) Depressive episodes which were frequently seen in the *Community Group* appeared to be the result of loss of self-esteem from the recognition of their own weaknesses and inability to obtain the satisfactions from the environment they had experienced as younger people. Guilt appeared to play a relatively minor role. The mechanisms by which they emerged from their depressive episodes is not clear.

(8) With regard to affect, the *Community Group* as a whole showed little evidence of capacity to express warm and spontaneous feelings toward others.

Comment

If one accepts electroencephalographic abnormalities as reliable indicators of altered cerebral functioning, then it appears that we have considerable evidence pointing toward a much higher incidence of disturbed cortical functioning in the senile individual than in the so-called normal old person. And further it would appear that the more effectively the old person functions, irrespective of age, the more likely is he to have normal cortical functioning as reflected in the electroencephalogram. While this is true statistically, we are still faced with a sizable number (20 per cent) of senile individuals who show no electrographic evidence of disturbed cortical functioning, and contrariwise, a much more sizable group (56 per cent) of elderly people who functioned adequately outside hospitals and nursing homes despite abnormal electroencephalograms. Thus, in a tentative way, we must conclude that there is more to adequate functioning in the aged than normal cortical activity as reflected by the electroencephalogram.

Of special interest to us have been the high percentage of persons with evidence of isolated temporal foci in their electroencephalograms. As pointed out, these focal changes did not appear to jeopardize the person's functioning in any way. Without autopsy correlations, which have been impossible in our work to date, we cannot say with any high degree of certainty what and where the organic changes they reflect may be. However, our own experiences with temporal lobe epilepsy, in terms of electroencephalographic correlation with operative findings, coupled with a recent article[10] correlating clinical and electroencephalographic findings with autopsy results, would suggest that they represent sclerotic changes (probably vascular in origin) in the hippocampal tip (tip of Ammon's horn). Whether this can be verified and what its implications are will await further work. It may be, of course, that these foci are early indications of vascular changes which will ultimately become generalized. This possibility can only be approached through later follow-up studies.

While our findings indicate that those who work and who keep up many activities and interests seem to escape the major mental illnesses and disabilities of old age, this cannot be taken as a simple cause and effect relationship. Quite another sequence may exist —those who have escaped senility may have done so because they have had less organic dysfunction to adapt to. Until we can study more carefully the life histories of people who have become senile and compare these with the life histories of those who still function adequately, the importance of personality functioning in the cause and prevention of mental illness in the aged cannot be assessed. Our preliminary impression, supported by the work of others, is that adequate adjustment techniques are of major importance, but that these patterns have to be laid down before old age arrives; that this cannot be postponed until 60 or even 40 years of age, but must begin in early life, even childhood.

How the brief depressive episodes and hypochondriacal preoccupations we have noted

in old people are related to aging remains unanswered. Possibly these factors, coupled with the withdrawal of affect from the environment that appears to be a usual response to aging, lead to metabolic changes and in turn to disorders in food intake, with nutritional disturbances. Is such a sequence another possible link between the fuctional or psychic and the organic aspects of mental illness in the aged? We are so deeply impressed with this possibility that we intend in future research to have close advice from nutritionists.

Summary

We have attempted to point out the importance of other factors than the strictly organic in the production of mental illness in the aged and to present certain of our own preliminary research material tending to support this view. We recognize that this represents the barest beginning, but we look forward to continued work in this area of study by ourselves and others answering some of the questions raised.

References

1. Cleckley, H. M., Sydenstricker, V. P., and Geeslin, L.: Nicotinic Acid in the Treatment of Atypical Psychotic States Associated with Malnutrition, J.A.M.A. 112:2107-2110 (May) 1939.
2. Abraham, K.: Selected Papers in Psychoanalysis, London, Hogarth Press, Ltd., 1927.
3. Langner, F., and Kemp, M.: Depressive Psychoses in Later Life, North Carolina M. J. 15:164-170 (April) 1954.
4. (a) Albrecht, R.: Social Roles in the Prevention of Senility J. Gerontol. 6:380-386 (Oct.) 1951. (b) Barron, M., Streib, G., and Suchman, E., Am. Social. Rev. 17:479, 1952.
5. Rusk, H.: America's Number One Problem—Chronic Disease and an Aging Population, Am. J. Psychiat. 106:270-277 (Oct.) 1949.
6. Schilder, P.: Introduction to a Psychoanalytical Psychiatry, New York, International University Press, 1951, chap. 15.
7. (a) Rothschild, D.: Pathologic Changes in Senile Psychoses and their Psychobiologic Significance, Am. J. Psychiat. 93:757-788 (Jan.) 1937. (b) Rothschild, D., and Sharp, M.: Origin of Senile Psychoses: Neuropathic Factors of a More Personal Nature, Dis. Nerv. System 2:49-54 (Feb.) 1941.
8. Wilson, W., and Schieve, J.: The Physiology of Arteriosclerosis and Senility, North Carolina M. J. 15:175-177 (April) 1954.
9. (a) Silverman, A., and others: Studies on the Processes of Aging: 4. Physiologic Influences on Psychic Functioning in Elderly People, Geriatrics 8:370-376 (June) 1953. (b) Busse, E., Barnes, R. H., and Silverman, A. J.: Studies in the Process of Aging, Dis. Nerv. System 15:22-26 (Jan.) 1954. (c) Barnes, R., and others: Paper Read Before the International Congress of Electroencephalography, Boston, Massachusetts, August, 1953. (d) Busse, E., and others: Studies of the Process of Aging: Factors that Influence the Psyche of Elderly People, Am. J. Psychiat. 110:897-903 (June) 1954.
10. Sano, K., and Malamud, N.: Clinical Significance of Sclerosis of the Cornu Ammonis, Arch. Neurol. & Psychiat, 70: 40-63 (July) 1953.

Food allergy: In some cases a specific allergen may be suspected from occurrence of symptoms on certain days of the week when certain foods are taken, from the season of the year, when certain foods ripen or are habitually eaten, when change in fodder of cows may include the patient's antigen or when certain pollens are known to be prevalent in the atmosphere.—Andresen, A. F. R.: Allergic Manifestations in the Gastrointestinal Tract, Gastroenterology 23:23 (Jan.) 1953.

THE PHYSICIAN'S ROLE IN PREVENTIVE PSYCHIATRY

ROGER WILLIAM HOWELL, M.D.

CHAPEL HILL

The most important part of my daily work consists of doing everything possible to improve the mental health program. Such a program needs help from many sources, the most important of which is perhaps the medical profession. Workers in mental health do not believe it presumptuous to suggest that they have help to offer the medical profession as well. We hope that physicians will agree.

The developing mental health program in North Carolina is currently receiving considerable attention. The interest which has been shown in increasing much needed facilities is indeed gratifying. The willingness of the people of our state to appropriate public monies for the continued improvement of treatment indicates a response to fine leadership in the field of mental health. Our governing bodies and those charged with administrative responsibility in the mental health program deserve genuine congratulations for their foresight and energy. Those devoted individuals who have been working with our mentally deficient and deranged population have shown, through their tireless efforts, that psychiatric treatment is a worthwhile investment. The limitations of personnel and actual housing facilities under which they have had to work would have long since discouraged a lackadaisical group. They, too, deserve high praise for their zeal and persistence.

A long held tradition in psychiatric circles focuses upon the hospitalization and treatment of ill persons. Obviously this is a much needed approach, and no one with any sense of humanity will believe that present facilities are adequate. Mentally sick people will continue for many years to come to make up an all too large percentage of our population. The construction of hospitals in which they can receive adequate care and treatment will continue to be a must.

Leaders in Local Programs

Hospitalization and treatment of the individual is not the only part of the program

---

Read before the Second General Session, Medical Society of the State of North Carolina, Pinehurst, May 5, 1954.

which needs support and expansion, however. Psychiatry has undergone considerable growth. Today the consideration of a mental disturbance cannot be confined to the patient alone, as a single entity does not exist in psychiatry. The parents, the family, and the community are inevitably involved in every patient's illness. There is reason to believe that this is as true in less populated areas as it is in large cities. Mental illness has become such a problem that it cannot be managed on the state level alone. Any program must reach deep into the grass roots, where mental illness develops and where it is discoverable in its earliest phases. Health enterprises of any sort depend upon the local physicians for leadership. If a community becomes interested in increasing its psychiatric facilities, it is naturally going to look to its physicians for guidance and leadership. Every community contains other persons who will be only too glad to assist in the project, but they cannot, and they probably will not, unless the doctors lend their support.

Here a personal observation seems to be indicated. It was my unpleasant experience, some years ago, to see a medical society decline to support the establishment of a greatly needed psychiatric clinic. Adequate financing was being provided, and a petition signed by important agencies in the community was presented. The clinic did not get started. On the brighter side, several rather new clinics in North Carolina have been given whole-hearted support by the local medical societies, and they continue to increase in effectiveness.

Physicians can assume, therefore, as one of their roles in preventive psychiatric programs, a responsibility for leadership in promoting local programs.

Diagnostician and Therapist

Perhaps the most important role which the physician can fill is also that which best fits his function as a diagnostician and therapist. As Dr. Paul Lemkau pointed out in a recent paper read before the North Carolina Society of Neurology and Psychiatry, evidence which has been accumulating over many years suggests that early life experiences have an important bearing on behavior in later life. Since the middle of the last century workers in psychiatry and allied fields have been adding to our knowledge of the dynamics of behavior. It is now known that psychiatric illnesses do not often occur suddenly and without warning. Each sick person has a history which reveals, if we are patient enough to find them, the premonitory symptoms and the precipitating factors. Simply stated: "Coming events cast their shadows before them." These premonitory shadows not infrequently cause trouble for the associates of those in whom they are developing. Parents recognize fairly readily the signs of anxiety and fear in their children. A pediatrician can spot the child who has too many temper tantrums as easily as he can observe a strabismus. A school teacher sees obvious evidences that one of her pupils is too withdrawn and fanciful. When these warnings are observed, the troubled individual is usually taken to the doctor, who is thereby presented with an unusual opportunity to make an early diagnosis and institute appropriate treatment.

Doctors as a source of referral

Most physicians do not credit themselves with sufficient knowledge of the field of psychiatry to undertake the diagnosis and treatment of mental illness. Psychiatrists generally believe that the average physician is fully qualified to diagnose and treat many minor psychiatric disturbances, especially if treatment is instituted early in the disease process. Many doctors who graduated from medical schools before the recent modifications in medical curriculums feel that they need further training in psychiatry designed for the general practitioner. Such courses are being given by most good medical schools. Since the emphasis in these courses is upon the early signs and symptoms, and methods of managing emotional disorders, attendance on one of these courses is another contribution which the physician can make to preventive psychiatry. Should one feel, however, that more thorough diagnosis and treatment is needed, physicians can do a great deal to help bring this about. The provision of psychiatric facilities will go far in attracting psychiatrists to local communities. Psychiatrists need hospital beds for their patients, just as surgeons do. They need nurses who are at least willing, even if not eager, to work with psychiatric patients. There are a number of areas in North Carolina where psychiatric patients are not admitted to the local hospital. Only physicians can remedy this undesirable situation.

Outpatient clinics or mental hygiene clinics should be made available to a greater number of our needy patients. Without help from the physicians of the state, they probably will not develop.

There is now acceptable evidence substantiating the thesis that early recognition and treatment is a factor in the prognosis of any emotional disorder. Hollingshead and Redlich, in a study of 847 patients under treatment for schizophrenia in the city of New Haven on December 1, 1950, concluded that early referral is one of three important contributing factors in successful therapy. The other two are: referral by a physician rather than a public agency or court; and good treatment by well trained personnel. After concluding that patients from a higher socio-economic class show the greatest improvement, these authors continue as follows:

> Schizophrenics in the highest class enter treatment earlier. This early treatment may be extremely important, especially if the upper class schizophrenic receives better treatment than the lower-class one. The upper-class schizophrenic enters treatment through medical channels; the lower-class schizophrenic through legal ones. Stated more dramatically, the upper-class patient rests on a therapist's couch, the lower-class one on a prison or hospital cot.
>
> Treatment is markedly different in the upper and lower classes. However, the differences during the acute phases of the illness are less marked than in the more chronic stages. Nevertheless, a relationship to class exists even when acute schizophrenics in one particular institution are compared by class.
>
> Once in a mental hospital, the lower-class schizophrenic is less likely to leave permanently, he rarely has more than one chance in the community. If he does not make the grade, he becomes a permanent resident of the institution. This fact makes us assume that the role of the community and its most important unit, the family, is of enormous importance in determining who stays in the hospital and who becomes re-integrated with his family. We believe that the forces operating in the family are a very powerful determinant for social recovery.

There is a good deal of meat for physicians in the above quotation. It is logical for us to think that physicians are better prepared to make proper referrals of patients to resources for treatment. Doctors should be in the best position to recognize symptoms of mental illness and to know what therapeutic facilities are within reach of their patients. Doctors are usually the first persons consulted by people in trouble, and therefore have the best opportunity to make early referral. Doctors are in the best position to know about the family and domestic stresses, and, being the first line of contact with the family, can help prepare a better reception for the patient when he returns to social life. These same factors apply—only perhaps more so—to those who are to be treated as outpatients. Thus the second contribution which the physician can make to the preventive psychiatric program is, early diagnosis and treatment.

Molders of Public Attitudes

The last suggestion which seems indicated concerns attitudes of people about mental illness, psychiatry, and psychotherapy. A large portion of the population still reacts with fear and resentment to people with mental illnesses. This attitude is a hang-over from the days when such persons were regarded as lunatics, weak-willed, and unfit for social intercourse. Though diminishing rapidly, it still prevents many people who really need help from getting it. The physician is in a position to do a great deal about this situation. He is looked upon as the health authority in his community, and if he shows a healthy concern and interest in mental health, many of his admirers will adopt his attitude. Too, the physician may find it necessary to help some of his patients accept the help which is indicated. Patients who are adequately prepared for psychiatric treatment generally do well, whereas patients who do not understand the need or the methods employed do not do well as a rule.

Summary

Physicians, as community leaders in health enterprises, must support advances in psychiatric methods for North Carolina, or the program will not develop. They must recognize the need for improved hospital facilities, adequate outpatient clinics, and trained personnel. They must support the expansion of facilities which already exist, but in insufficient quantity.

Doctors can do a great deal to enhance the efficiency of the facilities by interesting themselves in the process of early diagnosis and treatment. They can handle many of the problems which come to them in such a manner that healthier emotional living becomes a pattern for the State of North Carolina.

NORTH CAROLINA MEDICAL JOURNAL

Owned and Published by

THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

Under the Direction of Its

EDITORIAL BOARD

WINGATE M. JOHNSON, M.D
Winston-Salem, Editor

MR. JAMES T. BARNES
Raleigh, Business Manager

G. WESTBROOK MURPHY, M.D.
Asheville, Chairman

ERNEST W. FURGURSON, M.D.
Plymouth

JOHN BORDEN GRAHAM, M.D.
Chapel Hill

WILLIAM M. NICHOLSON, M.D.
Durham

ROBERT W. PRICHARD, M.D.
Winston-Salem

HUBERT A. ROYSTER, M.D.
Raleigh

MISS LOUISE MACMILLAN
Winston-Salem, Assistant Editor

VOLUME 15

JANUARY-DECEMBER, 1954

EDITORIAL OFFICE

300 South Hawthorne Road — Winston-Salem 7, N. C.

Press of

CARMICHAEL PRINTING COMPANY

118 West Third Street — Winston-Salem 1, N. C.

North Carolina Medical Journal

Owned and published by
The Medical Society of the State of North Carolina,
under the direction of its Editorial Board.

EDITORIAL BOARD

Wingate M. Johnson, M.D., Winston-Salem
Editor
Miss Louise MacMillan, Winston-Salem
Assistant Editor
Mr. James T. Barnes, Raleigh
Business Manager
Ernest W. Furgurson, M.D., Plymouth
John Borden Graham, M.D., Chapel Hill
G. Westbrook Murphy, M.D., Asheville
William M. Nicholson, M.D., Durham
Robert W. Prichard, M.D., Winston-Salem
Hubert A. Royster, M.D., Raleigh

Address manuscripts and communications regarding editorial matter to the
NORTH CAROLINA MEDICAL JOURNAL
300 South Hawthorne Road, Winston-Salem 7, N. C.

Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 203 Capital Club Building, Raleigh, N. C.

All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

Annual subscription, $3.00 Single copies, 50¢

Publication office: Carmichael Printing Co., 118 West Third Street, Winston-Salem 1, N. C.

"The prime object of the medical profession is to render service to humanity; reward or financial gain is a subordinate consideration. Whoever chooses this profession assumes the obligation to conduct himself in accord with its ideals."—Principles of Medical Ethics of the American Medical Association, Chapter 1, Section 1.

JANUARY, 1955

A SPIRITUAL REBIRTH URGED

At the American Medical Association's Clinical Meeting in Miami, our neighbor Julian Price, formerly editor of the *South Carolina Medical Journal* and secretary of the South Carolina Medical Association and now an A.M.A. trustee, stole the show with his paper delivered before the pediatric group—"The Man Behind the M.D." One of the Miami papers gave it a prominent place on the front page, and several other papers in other parts of the country used it as the basis for editorials. As George Lull said in his weekly letter for December 20, "It really rang the bell with the public."

In this paper Dr. Price said that . . . the physical and mental health of our nation is relatively good but that there is evidence of spiritual disease.

"'Since the disease is spiritual,' he said, 'the treatment must also be spiritual.' He added that the symptoms were not hard to find.

"Dr. Price listed among them 'laxness of morals in our national government in recent years . . . the hold which organized vice has upon legislative and social life . . . increase in crime in our teen-age population . . . bribery and unethical conduct in amateur athletics . . . the mad search for pleasure which causes our people to spend four times as much for beverages as they do for religious and welfare activities . . . '

"He called upon his fellow physicians to combat this 'disease' by taking part in government, devoting particular interest to public education, working with boys and girls, and charitable and philanthropic organizations, and having healthy, happy homes of their own.

"'The only remedy which is of any avail—and to this history bears testimony—lies in a change of heart. It is my sincere belief that the greatest need of our country today—and of our profession—is a spiritual rebirth, a return to God and to his eternal principles. And the rebirth must come in the heart of the average citizen—and in the heart of the average doctor of medicine.'"

A big reason for the effectiveness of Julian Price's message is that he was speaking from the heart, as he himself is one of the finest examples of the successful Christian physician.

* * *

NEED FOR PUBLIC UNDERSTANDING OF DRUG PRICES

Dr. George Lull's weekly "Secretary Letter" is always read with great interest in this editorial office, for George always has something to say and says it well. His Christmas week letter, dated December 20, is perhaps the best yet. It began with an exquisite prose poem, "Merry Christmas to All." Then came the reference to Dr. Julian Price's paper, which has been used as an editorial for this JOURNAL.

Another very timely comment concerned an address given by Mr. John Bach, director of the American Medical Association's press relations, to Parke, Davis & Company executives. Mr. Bach said that there was a real need for the public to be given a better understanding of antibiotic drug prices. As an illustration, he said, "Five dollars worth of penicillin can eliminate the need for a $150 mastoid operation and $200 in hospital bills." Another example was the treatment of pneumonia. Antibiotics have changed the former death rate of 33 per cent to 1 or 2 per cent—not to mention the saving in hospital and nursing bills, and the man hours lost from work.

Mr. Bach then called attention to the much lower prices of the antibiotics now as compared to the early prices: "In 1944 penicillin cost $20 for an average dose of 100,000 units. Today, it is anywhere from two to eight cents for the same amount. Streptomycin came on the market at $15 a gram. Today, the same amount can be bought for 15 cents. Some of the more recently developed antibiotics in the 'broad spectrum' group have been cut 50 per cent in price."

In this effort to help the public understand the manufacturer's viewpoint, the physician can be of inestimable help. He should be interested also for the selfish reason that the public are apt to lump all the costs of illness, including hospital, nursing and drug bills, as "doctors' bills." A more enlightened and unselfish view is that the pharmacist is—or should be—one of the doctor's best friends, and they should work together for the common good of the patient.

* * *

SHOULD STATE TAXES BE LOWERED?

For many years North Carolina has had one of the lowest per capita incomes in the Union and one of the very highest income tax rates. In spite of this, the present legislature is giving serious consideration to increasing our taxes.

An editorial published in the NORTH CAROLINA MEDICAL JOURNAL for October, 1950, is still so pertinent that it is published again, with the single change of the governor's name.

* * *

The late Archibald Johnson, while he was editor of *Charity and Children*, was offered the editorship of a paper in another state at a $1,000 a year increase in salary. Although this would have almost doubled his income—for a dollar then had full five times its present value—he declined the offer, and gave as his reason that it was worth $1,000 a year to live in North Carolina.

While such spectacular examples of Tar Heel loyalty may be rare, there are many citizens living in North Carolina today who make a financial sacrifice to stay in this state. Reference to any of the recent tax guides will reveal that North Carolina has the second or third highest income tax rate in the Union; that only four other states have a sales tax as high; that only 12 other states have gasoline taxes as high; and that in all but six other states the taxpayer is allowed to deduct his federal income tax in computing his income for state taxes.

In spite of this record, Governor Hodges is quoted as saying that higher taxes will probably have to be levied, in order to meet the state's rising budget. For many years Mr. Paul Leonard, secretary of the State's Merchants' Association, has contended—and few men have given more thought to the question than he—that our high state taxes are keeping new industries from moving into the state and are driving other industries out. Our legislators should remember that there is a law of diminishing returns.

Donald Adams, in the "Book Review Section" of the *New York Times*, recently extolled North Carolina's climate and the beauty of her scenery as unexcelled anywhere in the Union. Unfortunately, however, our citizens cannot live on air and beautiful scenery alone. Now that the state has set aside enough surplus to pay off its debt, the grievous tax burden now resting upon North Carolina citizens should be relieved to some extent, at least. Surely it is not fair to tax our own citizens for being loyal to their state.

* * *

NEW YEAR RESOLUTIONS

Despite the tendency to belittle New Year resolutions, there is much to be said in favor of an occasional inventory of one's failings and a corresponding resolve to overcome them so far as possible. It is natural to make these resolutions at the beginning of the new year.

The editorial staff of the NORTH CAROLINA MEDICAL JOURNAL begins the year 1955 with an acute sense of shortcomings in the past and with the hope of doing better in the future. One of the most trying and embarrassing experiences of the past year has been a number of failures to get the JOURNAL out on time. Long explanations and reasonably valid excuses could be offered—but instead the editorial staff and our publishers are together issuing two joint resolutions: (1) To do our level best to get out each issue on time—at least within the month of issue; and (2) to maintain the highest possible standards of medical journalism.

BULLETIN BOARD

COMING MEETINGS

Watts Hospital Medical and Surgical Symposium—Watts Hospital, Durham, February 9-10.

Fourth Annual Cancer Symposium sponsored by the Forsyth County Medical Society—Robert E. Lee Hotel, March 10.

North Carolina Rural Health Conference: Eastern Conference — Eastern Carolina Teachers College, Greenville, March 17; Western Conference—George Vanderbilt Hotel, Asheville, March 24.

Twenty-third Annual Venereal Disease Postgraduate Course—Tulane Medical School of Louisiana in New Orleans, January 31-February 4.

Southeastern Surgical Congress, Twenty-Fifth Anniversary Meeting, held in conjunction with the **Atlanta Graduate Medical Assembly**—Biltmore Hotel, Atlanta, February 21-24.

Annual Congress on Medical Education and Licensure—the Palmer House, Chicago, February 5-8.

Rural Health Conference — the Schroeder Hotel, Milwaukee, Wisconsin, February 24-26.

American College of Surgeons, Sectional Meeting—Nashville, Tennessee, April 4-6.

American Congress of Physical Medicine and Rehabilitation — Hotel Statler, Detroit, August 28-September 2.

NORTH CAROLINA STATE BOARD OF MEDICAL EXAMINERS

Dr. Gibbons Westbrook Murphy of Asheville has been elected to fill the unexpired term of Dr. James P. Rousseau of Winston-Salem on the North Carolina Board of Medical Examiners, according to Dr. Joseph J. Combs of Raleigh, secretary of the board. Dr. Rousseau, whose term was due to expire in July, 1957, resigned as of January 11 because of his position as president-elect of the Medical Society of the State of North Carolina.

NEWS NOTES FROM THE DUKE UNIVERSITY SCHOOL OF MEDICINE

Addressing the American Association for the Advancement of Science, in Berkley, California, last month, Dr. Joseph W. Beard, professor of experimental surgery at the Duke Medical School, reported three significant new discoveries regarding viruses as cancer-producing agents:

1. A Duke research team comprising Dr. Beard, Dr. D. Gordon Sharp, Dr. Edward A. Eckert, and Dr. Dorothy Beard for the first time has purified a true cancer virus which causes erythromyeoblastic leukosis, a disease closely resembling human leukemia.

The Duke team isolated and concentrated the virus almost four years ago, but now they have definitely purified it. The research tool for establishing purity of the virus preparations is an immune serum, artificially produced in chickens, which neutralizes the virus.

2. The researchers also have "proved conclusively" that this virus has enzyme activity which undoubtedly plays a major part in producing cancer.

3. They have proved further that the virus contains tissue which is indistinguishable from the normal tissue of the invaded cell.

These discoveries greatly broaden the knowledge of the nature of viruses and probably will reopen investigation of other viruses believed to have enzyme activity.

CONFERENCE ON RURAL HEALTH

The Committee on Rural Health of the Medical Society of the State of North Carolina has scheduled conferences on Rural Health to be held in the eastern and western regions of the state respectively. The eastern conference will be held at Eastern Carolina Teachers College in Greenville on March 17, and the western conference at the George Vanderbilt Hotel in Asheville on March 24.

FOURTH ANNUAL CANCER SYMPOSIUM

The fourth annual cancer symposium of the Forsyth County Medical Society will be held on the afternoon and evening of March 10 at the Robert E. Lee Hotel in Winston-Salem, according to an announcement by Dr. George W. James, chairman of the society's cancer committee.

Four prominent speakers will participate in the program, which will deal with cancer of the gastrointestinal tract. They are: Dr. Arthur Purdy Stout, New York City; Dr. Albert Andreson, New York; Dr. Edward W. Chamberlain, Atlanta; and Dr. Claude E. Welsh, Boston.

1955 NORTH CAROLINA MARCH OF DIMES AGAINST POLIO

The polio attack rate in North Carolina in the year just ended was about 28 per cent lower than the national average, according to provisional reports. Nationwide, the number of cases reported in 1954 was the third highest on record.

In 1953, when 926 polio cases were reported, the attack rate in North Carolina was about the same as the national average. It is impossible to predict where and when polio epidemics will strike, which underlines the need for more effective control measures.

Evaluation of the Salk vaccine, administered to 440,000 U.S. children, in the largest medical experiment of its kind ever conducted, is now in progress. Announcement of the vaccine's effectiveness will be made in the Spring of 1955.

During the field trials last spring about 2,900 children in the state of North Carolina were inoculated with the Salk vaccine.

EDGECOMBE-NASH MEDICAL SOCIETY

Dr. William Anlyan, associate in surgery, Duke Hospital, addressed the Edgecombe-Nash Medical Society in November. His subject was "Pancreatitis." There was no scientific program at the December meeting.

FORSYTH COUNTY MEDICAL SOCIETY

Dr. Martin D. Young, science director of the laboratory of tropical diseases, Columbia, South Carolina, spoke on "The Role of the Public Health Service in Tropical Disease in Foreign Countries" at the regular monthly meeting of the Forsyth County Medical Society held in Winston-Salem on January 11.

NEWS NOTES

Dr. Richard L. Masland has announced the association of Dr. Robert R. J. Strobos in the practice of neurology, with offices in the Bowman Gray School of Medicine, Winston-Salem.

* * *

Dr. Archie Y. Eagles has announced that Dr. Samuel J. Calvert is now associated with him in the practice of internal medicine in Ahoskie.

SOUTHEASTERN SURGICAL CONGRESS

The twenty-fifth anniversary meeting of the Southeastern Congress will be held concurrently with the Atlanta Graduate Medical Assembly at the Biltmore Hotel in Atlanta, February 21-24.

The program has been built around the first scientific program of the Congress, which was presented in Atlanta in 1931. Many of the original subjects will be presented again, showing the progress which has been made during the past 25 years. Some of the original speakers will be present. In addition to these papers, a variety of surgical papers will be presented by authorities in the field.

Panel discussions will be held on the following subjects:

Monday, 4:30 p.m.
"Cancer of the Breast"—Dr. Harry H. Kerr, Washington, D. C., moderator.

Tuesday, 4:30 p.m.
"Diseases of the Colon"—Dr. Edwin Ransdell, White Plains, moderator.

Wednesday, 4:30 p.m.
"Lung Tumors"—Dr. O. C. Brantigan, Baltimore, moderator.

Thursday, 12:30 p.m.
"Venous Thrombosis"—Dr. Alton Ochsner, New Orleans, moderator.

An excellent program has been prepared by the Atlanta Graduate Medical Assembly. All guests are privileged to attend both programs.

NEWS NOTES FROM THE AMERICAN MEDICAL ASSOCIATION

William W. Hetherington has been named managing publisher of *Today's Health* magazine, the official consumer publication of the American Medical Association.

Dr. George F. Lull, secretary-general manager of the A.M.A., announced the creation of the position and Hetherington's appointment. He said: "It is contemplated that the magazine, with more than 350,000 circulation, will be expanded and developed to further attain the basic objective of publishing a modern, authentic, effective and popular publication for the general public. Mr. Hetherington's duties will include the coordination of the editorial, circulation and advertising section of the publication."

Dr. Lull also announced a six-man editorial board for *Today's Health*: Drs. Walter E. Vest, Huntington, West Virginia; Julian P. Price, Florence, South Carolina; Austin Smith, editor of the *Journal of the American Medical Association;* George F. Lull; Mr. Leo Brown, director of the A.M.A.'s Department of Public Relations, and Dr. W. W. Bauer, chief editor of *Today's Health* and chairman of the editorial board.

* * *

Eight-Day Cruise

An eight-day cruise to Bermuda and Nassau has been arranged for physicians and their wives following the A.M.A. meeting at Atlantic City in June.

All space is being held for the A.M.A., and reservations should be made immediately. For further information write W. M. Maloney, Chicago, Burlington and Quincy Railroad, 105 West Adams Street, Chicago.

New Booklets on Community Health Planning

With an eye to better health at the community level, A.M.A.'s Council on Medical Service has prepared two attractive new pamphlets dealing with health leadership and community health planning. (1) "The Key to Community Health" describes community health councils—offers how-to-do-it information on organizing and operating them, with helpful hints for mobilizing community leaders to action. (2) "Main Line Route" was designed primarily for woman's auxiliaries.

Both booklets may be obtained by writing directly to the Council.

* * *

Dr. Judd to Speak at Rural Health Conference

A physician-statesman will be the headline speaker at the A.M.A.'s tenth National Rural Health Conference February 24-26 at the Schroeder hotel, Milwaukee, Wisconsin. The Honorable Walter H. Judd, M.D., congressional representative from Minnesota, will speak on "Rural Health and World Peace" at the Friday evening banquet.

* * *

New "March of Medicine" Series Slated

The "March of Medicine" television program once again will bring to the American people the latest reports of medical progress across the nation. The first program in the spring 1955 series will be carried over the National Broadcasting Company's television network on Sunday, February 26.

Further details will be announced later. Watch your local newspapers for time and station of the shows in your area.

* * *

Award to "March of Medicine" Mental Illness Show

In recognition of the "outstanding contribution to public understanding of the problem of mental illness" the American Medical Association and Smith, Kline & French Laboratories recently received a citation from the National Association for Mental Health. The award was for the "March of Medicine" telecast entitled "Search for Sanity" which was presented by Smith, Kline & French and the A.M.A. October 31 over the NBC-TV network. This program reported on the care and treatment of mental patients and on research projects now being conducted in the field.

Dr. Leo H. Bartemeir, chairman of A.M.A.'s Council on Mental Health, accepted the award on behalf of the A.M.A. in Philadelphia.

* * *

A.M.A. Issues New Catalogue of Health Booklets

For a healthier 1955, the A.M.A.'s Bureau of Health Education presents its new catalogue of "Publications About Your Health." Listing hundreds of new pamphlets on personal and family health problems, copies of these booklets may be secured for distribution to your patients through A.M.A.'s Order Department.

New titles include—"For Safer Cycling," which describes a community program for teaching children safe bicycling rules; "Is He Ready for Kindergarten?" outlining the points parents should watch for in the physical, mental and emotional development of their pre-school children; "The New Contact and Corneal Lenses," discussing the new type lenses and the types of people who can safely wear them; "Joe's Nervous Breakdown," explains why and how breakdowns occur and what to do about them.

American College of Surgeons

Scientific reports, symposiums, hospital clinics, panel discussions, and films on current surgical problems will be presented by eminent surgeon-teachers at the three-day Sectional Meeting of the American College of Surgeons in Nashville, Tennessee, April 4 through 6. All medical representatives are invited to attend. Dr. James A. Kirtley, Jr., Nashville, is chairman of the Local Committee on Arrangements. Headquarters for this meeting will be the War Memorial Auditorium.

Subjects to be covered include an extensive symposium on Management of Auto Accident Victims, with discussions by representatives of all specialties likely to be involved in such cases, panel discussions on Bile Duct Injuries and Peptic Ulcers, Cardiovascular Surgery, and a Symposium on Cancer.

Dr. Kirtley will preside over the opening session, April 4, when Richard B. Cattell, Boston, will speak on Biliary Tract Surgery, William A. Altemeir, Cincinnati, on Abuses of Antibiotics, and John M. Waugh, Rochester, Minnesota, on Various Types of Gastrectomy.

Dr. George K. Carpenter, Nashville, will preside over the afternoon symposium on Management of the Automobile Accident Victim. Speakers follow: Robert H. Kennedy, New York, Moderator; Moore Moore, Jr., Memphis, "Immediate Management of the Accident Victim"; William F. Meacham, Nashville, "Neurological Injuries"; Harwell Wilson, Memphis, "Abdominal Injuries"; David H. Waterman, Knoxville, "Thoracic Injuries"; Charles E. Haines, Jr., Nashville, "Urological Injuries"; Robert C. Robertson, Chattanooga, "Skeletal Injuries"; Greer Ricketson, Nashville, "Injuries Requiring Plastic Repair."

Dr. Willard H. Parsons, Vicksburg, will preside over the morning session on April 5, when surgical films will be shown, followed by a report by Dr. Michael E. DeBakey, Houston, on "Esophageal Varices."

Dr. John C. Burch, Nashville, will preside over the two afternoon programs: (1) panel discussion on Childbirth Injuries: moderator—Howard C. Taylor, Jr., New York; collaborators—John C. Weed, New Orleans; Howard Ulfelder, Boston; Frank E. Whitacre, Nashville. (2) symposium on Vascular Surgery: Michael E. DeBakey, Houston; Frederick W. Cooper, Jr., Emory University; George H. Yeager, Baltimore; Harris B. Shumacker, Jr., Indianapolis.

Dr. Alfred Blalock, president, American College of Surgeons, will preside at the dinner meeting on April 5, at which Dr. Paul R. Hawley, the director, will speak on the work of the College.

On the morning of April 6, Dr. Pat R. Imes, Louisville, will preside over the following series of reports: R. Kennedy Gilchrist, Chicago, and Frederick A. dePeyster, Chicago, "Safeguards in Major Abdominal Surgery of the Aged"; H. Thurston Whitaker, Vicksburg, "Modern Indications for Tracheotomy"; W. E. Kittredge, New Orleans, "Congenital Anomalies of the Urogenital Tract"; Alfred Blalock, Baltimore, "Some Debatable Points in Cardiovascular Surgery"; Harry W. Hale, Jr., Buffalo, "The Thoracoabdominal Approach to Lesions of the Upper Abdomen"; Rudolf J. Noer, Louisville, "Diverticulitis"; Howard Ulfelder, Boston, "The Management of Cystocele and Prolapse."

Dr. Leonard W. Edwards, Nashville, will preside over a symposium on cancer and a panel discussion on peptic ulcer: Cancer: Hayes E. Martin, New York, "Surgical Treatment for Cancer of the Floor of the Mouth, Gum and Anterior Tongue"; Norman L. Higinbotham, New York, "Malignant Transformation on Benign Bone Tumors"; Clarence E. Gardner, Durham, "The Treatment of Carcinoma of the Breast."

Peptic Ulcer: moderator — Robert M. Zollinger, Columbus; collaborators—Harry W. Hale, Jr., Buffalo; Stanley O. Hoerr, Cleveland; Rudolf J. Noer, Louisville.

Information about this or other Sectional Meetings may be obtained from Dr. H. Prather Saunders, Associate Director, American College of Surgeons, 40 East Erie Street, Chicago 11, Illinois.

Harvard University School of Public Health

Public Health Scholarships

Scholarships for the academic year 1955-1956 will be granted to individuals of high professional promise in awards ranging from part tuition to tuition plus a stipend, according to the qualifications and financial needs of the applicants. The scholarship funds are limited and are primarily intended for citizens of the United States.

Scholarship applicants must be eligible for admission to the school as a candidate for one of the following degrees: Master of Public Health, Doctor of Public Health, Master of Science in Hygiene, Doctor of Science in Hygiene, Master of Industrial Health.

Scholarships are available to physicians who wish to obtain postgraduate education in the field of public health or in one of the basic sciences related to public health.

A catalogue of the school, admission and scholarship applications, and further information may be obtained by writing the Secretary, Harvard School of Public Health, 55 Shattuck Street, Boston 15, Massachusetts.

Scholarship applicants must return completed admission and scholarship applications to the Harvard School of Public Health by March 1, 1955. Scholarship awards will be announced May 1, 1955.

American Red Cross

Presentation of a 14½-minute color film with sound, "Prescription for Life," was made to the American National Red Cross for education of the public on the organization's blood program December 9 at a reception at the Hotel Statler, Washington, D. C.

Sponsored by E. R. Squibb and Sons, Division of the Olin-Mathieson Chemical Corporation, the film was presented by John C. Leppart, Executive Vice President of the Olin-Mathieson Corporation. Dr. David N. W. Grant, director of the Red Cross Program, was chairman of the ceremonies, and Ellsworth Bunker, American Red Cross President, expressed the appreciation of the organization in his acceptance remarks.

"Prescription for Life" was produced by the William J. Ganz Company, of New York City. Distribution is on a loan basis from the four American Red Cross Area offices through local Red Cross chapters. The purchase price is $50.

John and Mary R. Markle Foundation

Markle Fund Grants

Medical schools in the United States and Canada have received a total of $3,229,000 for aid of their faculty members from the John and Mary R. Markle Foundation through its Scholar in Medical Science program, John M. Russell, executive director and vice president of the fund announced in the annual

report issued recently. Since the program began in 1948, 60 medical schools have shared this sum, given to help selected young faculty members on their staffs to become established in teaching and research.

Through a grant of $150,000 to the Association of American Medical Colleges, the Foundation during the year supported research on medical students. One of the studies, on the cost to the student of attending medical school, shows that $9,200 is the sum spent on the average for four years, though the amount varies greatly from one school to another, and within any school from one student to another. Other Association studies in progress under the Foundation grant deal with women medical students and the extent to which they practice medicine after graduation, the success of older students in medical school and the drop-out rate for individual schools and reasons for withdrawal.

(BULLETIN BOARD CONTINUED ON PAGE 38)

The Month in Washington

Because this is a new Congress and under new leadership, a number of new bills can be expected in the health field. But the Democrats also can be expected to devote a vast amount of time to health legislation that was previewed last session by the Republicans.

In fact, one of the more prominent bills on the list, that providing federal reinsurance of health insurance plans, was subjected to lengthy hearings before it finally met defeat in the House late in the last session. So thoroughly was it dissected then that it will be surprising if the friends of reinsurance can find anything else favorable to say about it, or its critics can find anything else wrong with it. How this Republican bill will fare in Democratic committees now is one big question.

There is always the possibility, of course, that some of the major bills to be presented again will be so amended that new decisions will be called for. For example, the administration's experts all fall have worked tirelessly to make the reinsurance bill more palatable.

Like the resinsurance bill, the proposal to revamp the procedure for distributing public health grants to states was well worked over last session. It passed the House, but the Senate committee was unable to untangle all the knots it discovered, so there was no final action. This, too, is up again this year, labeled as difficult and touchy but nonpartisan.

From the Washington Office of the American Medical Association.

Another well advertised bill coming up for action is that to set up a program of contributory health insurance for federal employees. Last session a Senate committee held a one-day hearing on this bill, admittedly merely to get the proposition "on the record" so it could be freely discussed between Congresses. A task force from the Civil Service Commission has been trying to hammer out a more workable version of the bill, and has found the task a formidable one. But despite the complications, Congress will be asked to enact some bill of this type.

Although the bill definitely is of Republican origin, there is no reason to expect that it will receive a hostile reception from the Democrats in either House. It is generally accepted as a too-long delayed attempt to bring the federal government into line with private industry.

The bill for expanding medical care for military dependents has about the same history. After months of planning and conferences, bills were introduced last year in House and Senate to get the idea out into the open for the benefit of Congress and the public. Because the plan is so highly controversial, however, no hearings were held last session. The same bill is going before Congress again.

Here the fundamental issue is whether military hospitals and uniformed physicians shall supply the preponderance of this service to dependents, or the dependents shall be treated largely by civilian physicians and in civilian hospitals.

Last session the Defense Department prepared the draft of a bill to set up a number of military medical scholarships. Because bills originating in one department that might affect another first must be submitted to the latter for comment, this bill was turned over to Mrs. Hobby's Department of Health, Education, and Welfare. There it rested until after Congress adjourned. The Eighty-Fourth Congress will be asked to enact the bill, possibly as an alternative to extending the Doctor Draft, which is scheduled to expire next July 1.

Efforts will be made, but not necessarily with the Eisenhower administration's help, to enact some sort of legislation for federal guarantee of hospital mortgage loans. This subject was gone into in great detail last session by Mr. Wolverton's House Interstate and Foreign Commerce Committee, but the

committee finally turned down Mr. Wolverton and refused to report out the bill for action. It had widespread labor support last year, but was opposed by the A.M.A. as discriminatory, in that it would offer more assistance to closed-panel practice than to other forms of medical practice.

Indications are that Mrs. Hobby's department will sponsor legislation to aid medical schools, a subject that was not taken up in the last Congress, but that attracted considerable attention in years past.

BOOK REVIEWS

What You Should Know About Mental Illness. By Orin Ross Yost, M.D., Medical Director, Edgewood Sanitarium Foundation, Orangeburg, South Carolina. Foreword by Nolan D. C. Lewis, M.D. Introduction by Leland E. Hinsie, M.D. and a Note by Norman Vincent Peale, D.D. 105 pages. Price, $3.50. New York: Exposition Press, 1954.

In this little book Dr. Orin Yost writes in nontechnical language a summary of the present status of mental illness. The book is divided into three parts: (1) "The Mind in the Making," (2) "Mental Illness and Its Treatment," (3) "Mental Illness: A Public Responsibility."

The discussions of psychosomatic illness, alcoholism and epilepsy are particularly well done. The final chapter, on "Psychiatry and Religion," should be helpful to pastors who want to help their members with various problems that are apt to confront him in pastoral counseling.

The book is written primarily for the layman, but might be helpful to a physician in suggesting explanations of various mental disorders that are apt to be asked for by patients and their relatives. The author is to be commended for scrupulously abstaining from suggesting self-medication for readers of the book.

Galen of Pergamon. By George Alfred Leon Sarton. Clendening Lectures on the History and Philosophy of Medicine, Series 3. 112 pages. Price, $2.50. Lawrence, Kansas: University of Kansas Press, 1954.

This little book is the third series of the Logan Clendening lectures on the history and philosophy of medicine. It sketches briefly, but adequately, the life of this remarkable man, who dominated medical practice for more than 14 centuries.

Dr. Sarton paints his word picture of Galen as Cromwell's portrayer was enjoined to do, "warts and all." Those who are interested in medical history will find this book quite helpful.

BOOKS RECEIVED

Patologia del Estomago Operado: Segundo Congreso Argentino de Gastroenterologia. Buenos Aires: Editorial Universitaria.

Emotions and Bodily Changes. By Flanders Dunbar, M.D., Med. Sc.D., Ph.D. Ed. 4, with supplementary material and additional bibliography. New York: Columbia University Press, 1954.

Diagnosis and Treatment of the Acute Phase of Poliomyelitis and Its Complications. Edited by Albert G. Bower, M.D. Baltimore: The Williams and Wilkins Company, 1954.

Leukemia Research: Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme and Margaret P. Cameron. Boston: Little, Brown and Company, 1954.

The Kidney: Ciba Foundation Symposium. Arranged jointly with the Renal Association. Edited by A. A. G. Lewis, M.D., of the Renal Association, and G. E. W. Wolstenholme of the Ciba Foundation, assisted by Joan Etherington. Boston: Little, Brown and Company, 1954.

Peripheral Circulation in Man: A Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme and Jessie S. Freeman, assisted by Joan Etherington. Boston: Little, Brown and Company, 1954.

Primer of Allergy: A Guidebook for Those Who Must Find Their Way Through the Mazes of This Strange and Tantalizing State. By Warren T. Vaughan, M.D. Ed. 4, revised by J. Harvey Black, M.D. St. Louis: The C. V. Mosby Company, 1954.

The Concept of Schizophrenia. By W. F. McAuley, M.D. New York: Philosophical Library, 1954.

Transactions of the American College of Cardiology, Vol. III—1953. Edited by Bruno Kisch, M.D., Robert P. Glover, M.D., and Ashton Graybiel, M.D. New York: Publication Committee of the American College of Cardiology, 1954.

This Pace is Not Killing Us. By J. I. Rodale. Emmaus, Pennsylvania: Rodale Books, Inc., 1954.

Handbook of Medical Treatment. By Henry D. Brainerd, M.D., and others. Ed. 4. Los Altos, California: Lange Medical Publications, 1954.

Review of Medical Microbiology. By Ernest Jawetz, Ph.D., M.D., Joseph L. Melnick, Ph.D., and Edward A. Adelberg, Ph.D. Los Altos, California: Lange Medical Publications, 1954.

Needed Research in Health and Medical Care: A Bio-Social Approach. By Cecil G. Sheps, M.D., M.P.H., and Eugene H. Taylor, M.D., M.P.H. Chapel Hill: The University of North Carolina Press, 1954.

The Scourge of the Swastika: A Short History of Nazi War Crimes. By Lord Russell of Liverpool. New York: Philosophical Library, 1954.

The changes in character of individual diseases from time to time is in itself an interesting story. Acute rheumatism today, for example, compared with a generation ago. Acute and severe inflammation of the heart valves, from having been very common, is now much less so, and rheumatic pericarditis has become a rarity. What has happened to the virulent form of scarlet fever that was so common and so lethal? And why?—seeing that we know as little about its causation or its treatment today as we did when this form of the disease was common.—Horder, L.: Fifty Years of Medicine, New York, Philosophical Library, 1954, p. 40.

Classified Advertisements

POSITION OPEN: PSYCHIATRIST

Place: Radford, Virginia. Salary: $12,000 per annum. Opportunity for advancement. The Work: Director of St. Albans Out-patient Clinic; Director Mountain Empire Guidance Clinic. Requirements: 3 years approved training. For further details address:

James P. King, M.D.
St. Albans Sanatorium
Radford, Virginia

Competent secretary-office administrator desires position. Four years in charge of psychiatrist's office. Address MR/O, P. O. Box 790, Raleigh, North Carolina.

BULLETIN BOARD

(CONTINUED FROM PAGE 36)

CONGRESS ON MEDICAL EDUCATION AND LICENSURE

What part television can play in future postgraduate medical education will be one of the featured attractions of the fifty-first annual Congress on Medical Education and Licensure to be held February 5-8 at the Palmer House, Chicago. The meeting will be sponsored by the A.M.A.'s Council on Medical Education and Hospitals in cooperation with the Federation of State Medical Boards of the United States and the Advisory Board for Medical Specialties.

The first of a series of annual work-shop conferences in the field of postgraduate medical education will be devoted to the potential use of television during the all-day session February 5. Open meetings of the Advisory Board and the Federation will be held February 6.

The place of legal and forensic medicine in undergraduate medical education and the future status of the internship in the medical education program will be discussed during the A.M.A. Council's program February 7. The February 8 sessions will be conducted by the federation.

More than 500 medical educators, officers and members of the state licensing boards and others interested in postgraduate medical education are expected to attend the four-day conference.

AMERICAN CONGRESS OF PHYSICAL MEDICINE AND REHABILITATION

The thirty-third annual scientfic and clinical session of the American Congress of Physical Medicine and Rehabilitation will be held August 28-September 2, 1955, inclusive, at the Hotel Statler, Detroit.

Scientific and cinical sessions will be given August 29, 30, 31, September 1 and 2. All sessions will be open to members of the medical profession in good standing with the American Medical Association.

In addition to the scientific sessions, annual instruction seminars will be held. These lectures will be open to physicians as well as to therapists, who are registered with the American Registry of Physical Therapists or the American Occupational Therapy Association.

Full information may be obtained by writing to the executive secretary, Dorothea C. Augustin, American Congress of Physical Medicine and Rehabilitation, 30 North Michigan Avenue, Chicago 2, Illinois.

* * *

To stimulate interest in the field of physical medicine and rehabilitation, the American Congress of Physical Medicine and Rehabilitation will award annually a prize for an essay on any subject relating to physical medicine and rehabilitation. The contest, while open to anyone, is primarily directed to medical students, interns, residents, graduate students in the pre-clinical sciences and graduate students in physical medicine and rehabilitation.

Manuscripts MUST BE in the office of the American Congress of Physical Medicine and Rehabilitation, 30 N. Michigan Ave., Chicago 2, not later than June 1, 1955.

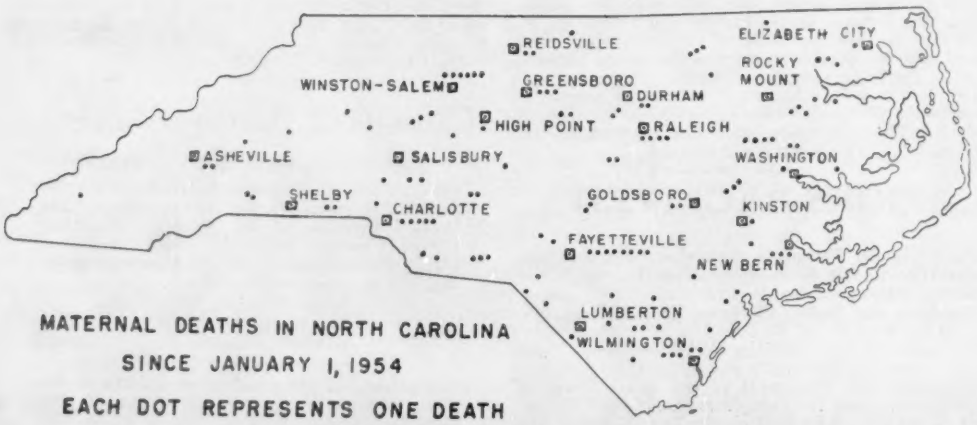
U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Public Health Service

The twenty-third Postgraduate Course on Venereal Disease will be given at Tulane Medical School of Louisiana in New Orleans from January 31 through February 4, 1955, co-sponsored by the Division of Graduate Medicine of Tulane University and the Public Health Service, U. S. Department of Health, Education, and Welfare.

The one-week course is designed to acquaint the practitioner with the latest developments in diagnosis, treatment, and management of the venereal diseases. No tuition will be charged. Applications for admission should be made immediately to Dr. Clifford Grulee, Jr., Director of the Division of Graduate Medicine of Tulane University of Louisiana, 1430 Tulane Avenue, New Orleans, Louisiana. The course is open to any physician either in civil or military practice anywhere in the United States.

The faculty for this course will be drawn from various universities, the U. S. Public Health Service, and outstanding authorities in the field. This course is accredited by the American Academy of General Practice.



Dramamine's® Effect in Vertigo

Dramamine has become accepted in the control of a variety of clinical conditions characterized by vertigo and is recognized as a standard for the management of motion sickness.

Vertigo, according to Swartout, is primarily due* to a disturbance of those organs of the body that are responsible for body balance. When the posture of the head is changed, the gelatinous substance in the semi-circular canals begins to flow. This flow initiates neural impulses which are transmitted to the vestibular nuclei. From this point impulses are sent to different parts of the body to cause the symptom complex of vertigo.

Some impulses reach the eye muscles and cause nystagmus; some reach the cerebellum and skeletal muscles and righting of the head results; others activate the emetic center to result in nausea, while still others reach the cerebrum making the person aware of his disturbed equilibrium. *Vertigo may be caused by a disease or abnormal stimuli of any of these tissues involved in the transmission of the vertigo impulse, including the cerebellum and the end organs.*

A possible explanation of Dramamine's action is that it depresses the overstimulated labyrinthine structure of the inner ear. Depression, therefore, takes place at the point at which these impulses, causing vertigo, nausea and similar disturbances, originate. Some investigators have suggested that Dramamine may have an additional sedative effect on the central nervous system.

Repeated clinical studies have established Dramamine as valuable in the control of the symptoms of Ménière's syndrome, the nausea and vomiting of pregnancy, radiation sickness, hypertension vertigo, the vertigo of fenestration procedures, labyrinthitis and vestibular dysfunction associated with antibiotic therapy, as well as in motion sickness.

Any of these conditions in which Dramamine is effective may be classed as "disease or abnormal stimuli"* of the tissues including the end organs (gastrointestinal tract, eyes) and their nerve pathways to the labyrinth.

Dramamine (brand of dimenhydrinate) is supplied in tablets of 50 mg. and liquid (12.5 mg. in each 4 cc.). It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. G. D. Searle & Co., Research in the Service of Medicine.

The site of Dramamine's action is probably in the labyrinthine structure.

*Swartout, R., III, and Gunther, K.: "Dizziness:" Vertigo and Syncope, GP *8*:35 (Nov.) 1953.

BRAWNER'S SANITARIUM

ESTABLISHED 1910

SMYRNA, GEORGIA

(SUBURB OF ATLANTA)

FOR THE TREATMENT OF PSYCHIATRIC ILLNESSES AND PROBLEMS OF ADDICTION

Psychotherapy, Convulsive Therapy, Recreational and Occupational Therapy

Modern Facilities

Custodial Care for a Limited Number of Elderly Patients at Monthly Rate

JAS. N. BRAWNER, M. D.
MEDICAL DIRECTOR

JAS. N. BRAWNER, JR., M. D.
ASSISTANT DIRECTOR AND SUPERINTENDENT

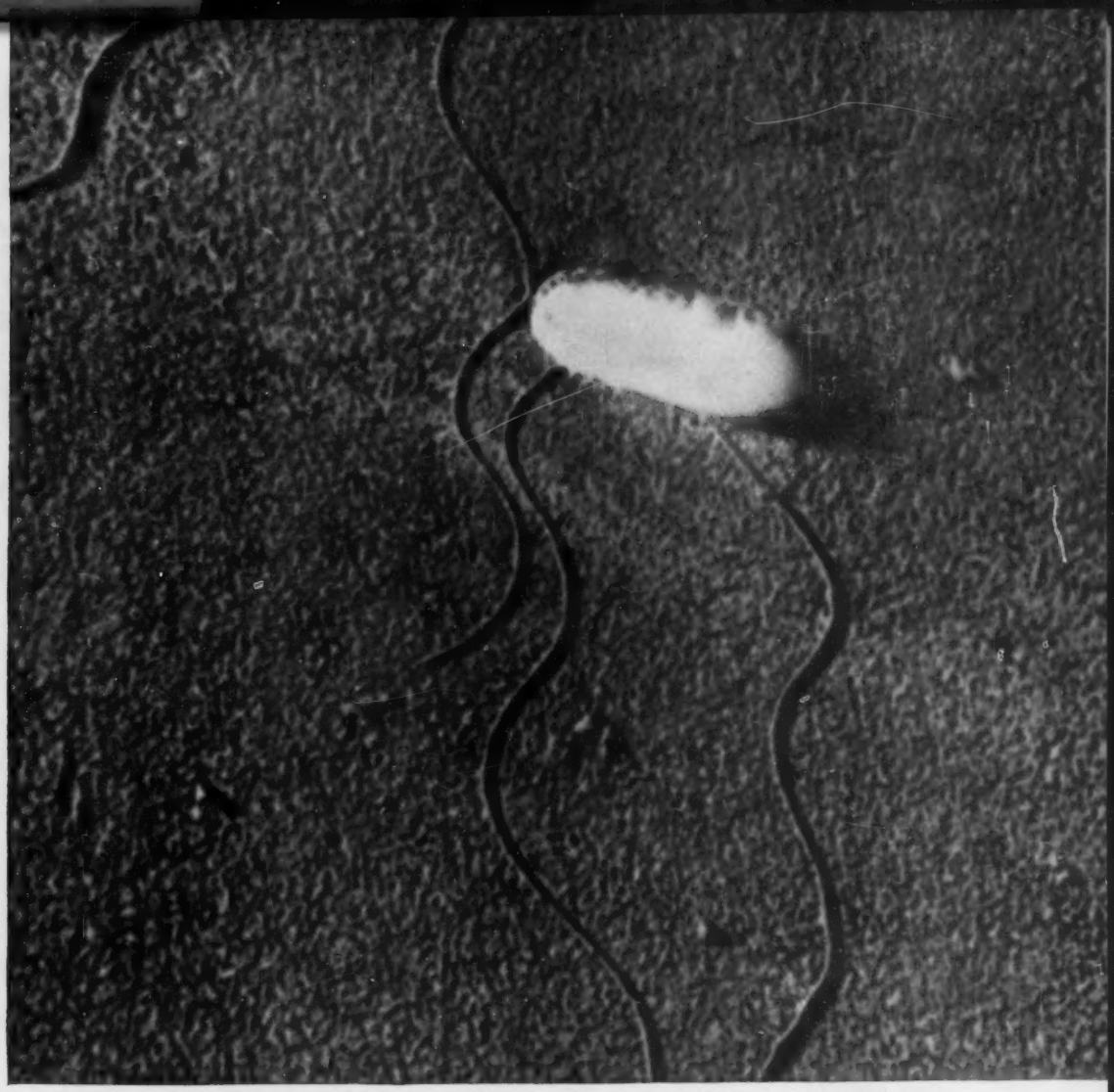
ALBERT F. BRAWNER, M. D.
RESIDENT SUPERINTENDENT

P.O. Box 218 **Phone 5-4486**

Relax the best way ... pause for Coke

Time out for refreshment

DRINK Coca-Cola
REG. U.S. PAT. OFF.



ELECTRON PHOTOMICROGRAPH

Salmonella paratyphi B 32,000 X

Salmonella paratyphi B (Salmonella schottmuelleri) is a

Gram-negative organism which causes

food poisoning • chronic enteritis • septicemia.

It is another of the more than 30 organisms susceptible to

PANMYCIN*

100 mg. and 250 mg. capsules

Upjohn

*TRADEMARK, REG. U. S. PAT. OFF.

STUART CIRCLE HOSPITAL

413-21 Stuart Circle **RICHMOND, VIRGINIA**

Medicine:
Manfred Call, III, M.D.
M. Morris Pinckney, M.D.
Alexander G. Brown, III, M.D.
John D. Call, M.D.
Wyndham B. Blanton, Jr., M.D.

Obstetrics and Gynecology:
Wm. Durwood Suggs, M.D.
Spotswood Robins, M.D.
Edwin B. Parkinson, M.D.

Orthopedics:
Beverly B. Clary, M.D.

Pediatrics:
Charles P. Mangum, M.D.
Edward G. Davis, Jr., M.D.

Ophthalmology, Otolaryngology:
W. L. Mason, M.D.

Surgery:
A. Stephens Graham, M.D.
Charles R. Robins, Jr., M.D.
Carrington Williams, M.D.
Richard A. Michaux, M.D.
Carrington Williams, Jr., M.D.

Urological Surgery:
Frank Pole, M.D.

Oral Surgery:
Guy R. Harrison, D.D.S.

Plastic Surgery:
Hunter S. Jackson, M.D.

Roentgenology and Radiology:
Fred M. Hodges, M.D.
L. O. Snead, M.D.
Hunter B. Frischkorn, Jr., M.D.
William C. Barr, M.D.

Physiotherapy:
Mrs. Peggie Ashley

Pathology:
Regena Beck, M.D.

Director:
Charles C. Hough

BROADOAKS SANATORIUM

MORGANTON, NORTH CAROLINA

James W. Vernon, M.D. E. H. E. Taylor, M.D. J. T. Vernon, M.D.

A PRIVATE HOSPITAL FOR THE TREATMENT OF NERVOUS AND MENTAL DISEASES, INEBRITY AND DRUG HABITS

A home for permanent care of selected cases of chronic nervous and mental diseases. Equipped for treatment by approved methods. Billiards, tennis and other diverting amusements. Located in Piedmont North Carolina, the climate is mild and invigorating at all seasons.

The three medical officers of the staff reside at the sanatorium and devote their full time to the care and service of the patients.

The world-famous XK 120 engine
. . . aerodynamic steel body
and super-strengthened frame
. . . perfect suspension . . . precision steering
. . . sure braking . . . superb "roadability"
under *any* conditions: that's *JAGUAR!*

CONTROLLED POWER

JAGUAR

the finest car of its class in the world

XK 120
Super Sports
priced from $3345
at Port of Entry
Wire wheels and
white wall tires
additional

IMPERIAL MOTORS
409 N. Tryon
Charlotte
Edison 4-3198

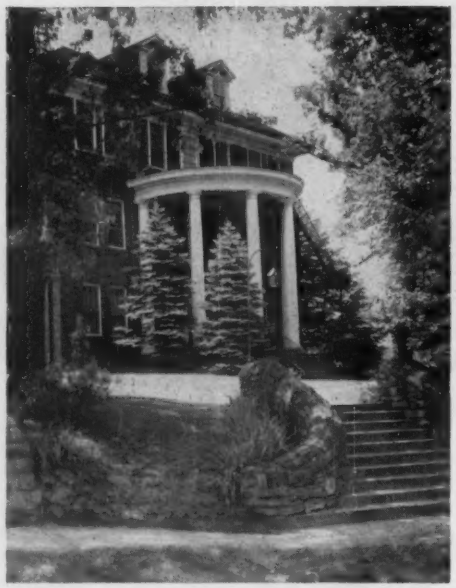
IMPERIAL CENTER MOTORS
310 Rigsbee Avenue
Durham
6-0793

ALEXANDER & MANN MOTOR CO.
234 Commerce Place
Greensboro
3-2882

HIGHLAND HOSPITAL, Inc.

FOUNDED IN 1904

ASHEVILLE NORTH CAROLINA



AFFILIATED WITH DUKE UNIVERSITY

A non-profit psychiatric institution, offering modern diagnostic and treatment procedures—Insulin, electro-shock, psychotherapy, occupational and recreational therapy—for nervous and mental disorders.

The Hospital is located in a seventy-five acre park, amid the scenic beauties of the Smoky Mountain Range of Western North Carolina, affording exceptional opportunity for physical and nervous rehabilitation.

The OUT-PATIENT CLINIC offers diagnostic services and therapeutic treatment for selected cases desiring non-resident care.

R. Charmon Carroll, M.D., Diplomate in Psychiatry
Medical Director

Robt. L. Craig, M.D., Diplomate in Neurology and Psychiatry
Associate Medical Director

Cooper Creme

no finer name in contraceptives

active ingredients:
Trioxymethylene .04%
Sodium Oleate 0.67%

FREE

Whittaker Laboratories, Inc. Dept. 10
Peekskill, New York

Please send: Full Size $1.50 Combination Package Free—Cooper Creme/Dosimeter.

Name _____ M.D.

Address _____

City _____ Zone _____ State _____

Whittaker Laboratories, Inc., Peekskill, New York

ELIMINATE STAIR CLIMBING

With An
INCLIN-ATOR
Or
ELEVETTE

INCLIN-ATOR goes up or down stairway. Seats two. ELEVETTE, a small home elevator, fits into stairwell, closet or other small space. Both are pushbutton controlled. Each is used in hundreds of North Carolina homes. They are **low in price, attractive, give years of low-cost operation,** and ELIMINATE STAIR CLIMBING. Doctors recommend them for the physically infirm.

For information without cost or obligation, write or call today. Monarch Elevator & Machine Co., Greensboro, North Carolina.

MONARCH ELEVATORS

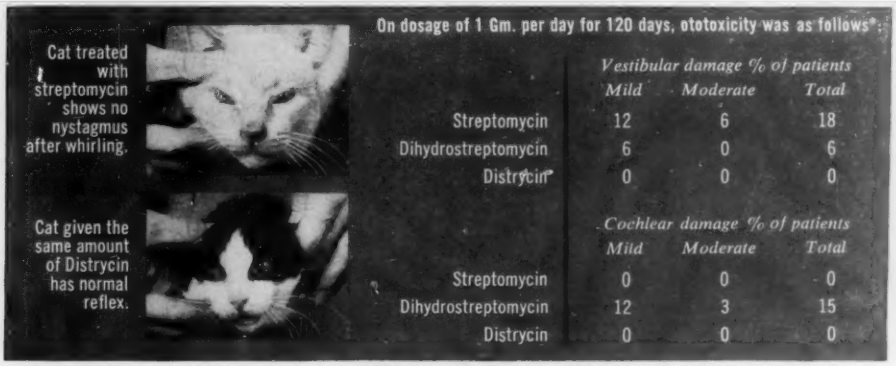
for greater safety in streptomycin therapy...

DISTRYCIN

Squibb Streptoduocin
Streptomycin and dihydrostreptomycin in equal parts

Distrycin has an important advantage over streptomycin. It has the same therapeutic effect but ototoxicity is greatly delayed. Since the patient is given only half as much of each form of streptomycin as he would have on a comparable regimen of either one prescribed separately, the danger of vestibular damage (from streptomycin) or cochlear damage (from dihydrostreptomycin) is significantly lessened.

Signs of vestibular damage appear in cats treated with Distrycin as much as 100 per cent later than in animals given the same amount of streptomycin.


Cat treated with streptomycin shows no nystagmus after whirling.
Cat given the same amount of Distrycin has normal reflex.
On dosage of 1 Gm. per day for 120 days, ototoxicity was as follows*:
Vestibular damage % of patients
Mild Moderate Total
Streptomycin 12 6 18
Dihydrostreptomycin 6 0 6
Distrycin 0 0 0
Cochlear damage % of patients
Mild Moderate Total
Streptomycin 0 0 0
Dihydrostreptomycin 12 3 15
Distrycin 0 0 0

*Heck, W.E.; Lynch, W.J., and Graves, H.L.: Acta oto-laryng. 43:416, 1953.

Distrycin dosage is the same as for streptomycin. In tuberculosis the routine dose is 1 Gm. twice weekly, in conjunction with daily para-aminosalicylic acid or Nydrazid (isoniazid). In the more serious forms of tuberculosis, Distrycin may be given daily, at least until the infection has been brought under control.

SQUIBB

a leader in streptomycin research and manufacture

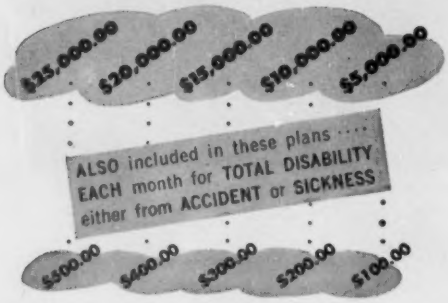
'Distrycin'® and 'Nydrazid'® are Squibb trademarks

Distrycin is supplied in 1 and 5 Gm. vials, expressed as base

Something NEW is Cooking

MORE INSURANCE NOW AVAILABLE

think! HOW THESE AMOUNTS WOULD HELP IN PAYING ESTATE TAXES IN CASE YOU ARE ACCIDENTALLY KILLED . . .



SPECIFIC BENEFITS ALSO FOR LOSS OF SIGHT, LIMB OR LIMBS FROM ACCIDENTAL INJURY

HOSPITAL INSURANCE ALSO FOR OUR MEMBERS AND THEIR FAMILIES

$4,000,000 Assets
$20,000,000 Claims Paid
52 Years Old

Physicians Casualty & Health Ass'ns.
Omaha 2, Nebraska

Whenever the diet is faulty, the appetite poor, or the loss of food is excessive

through vomiting or diarrhea—

Valentine's
MEAT EXTRACT

stimulates the appetite,

increases the flow of digestive juices,

provides: supplementary amounts of vitamins, minerals and soluble proteins,

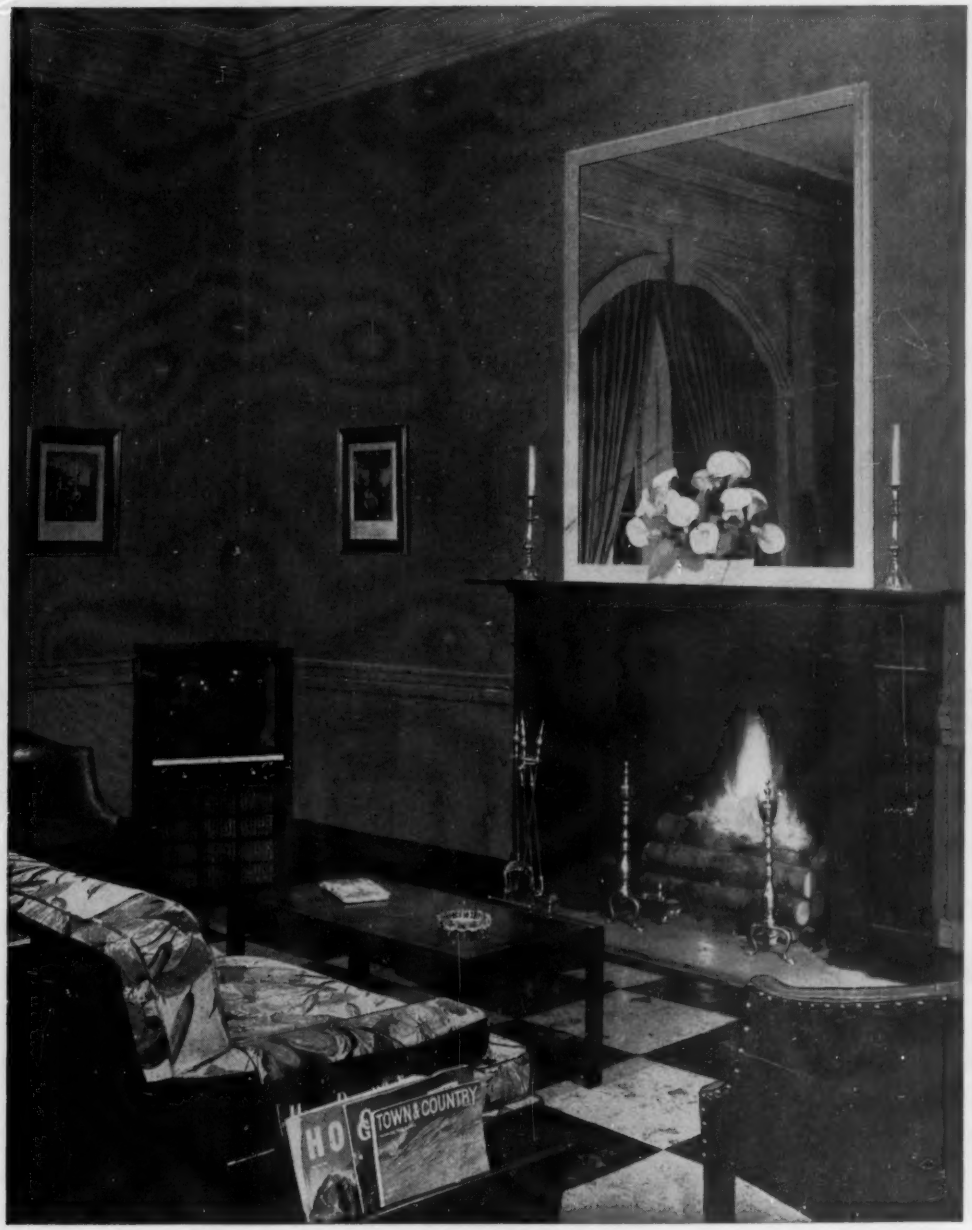
extra-dietary vitamin B_{12},

protective quantities of potassium, in a palatable and readily assimilated form.

Supplied in bottles of 2 or 6 fluidounces.

***Dosage** is 1 teaspoonful two or three times daily; two or three times this amount for potassium therapy.*

VALENTINE Company, Inc.
RICHMOND 9, VIRGINIA



Specializing in the Treatment of Alcoholism

THE KEELEY INSTITUTE

447 W. WASHINGTON ST. PHONE 2-4413

GREENSBORO, N. C.

REGISTERED WITH THE COUNCIL ON EDUCATION AND HOSPITALS OF AMERICAN MEDICAL ASSOCIATION.
MEMBER AMERICAN HOSPITAL ASSOCIATION. MEMBER NORTH CAROLINA HOSPITAL ASSOCIATION.

CREATE BETTER PUBLIC RELATIONS

(And Get Your Money Too)

When it comes to collections, you create better public relations by calling in professional collection people . . . experts that know how to handle your unpaid accounts, honestly and tactfully.

Medical-Dental Credit Bureaus have the staff and the specialized techniques that assure you prompt collections. Each case is handled individually in a dignified and ethical manner.

Yes, Medical-Dental Credit Bureaus can help you create better public relations . . . and get your money too. Call or write the office nearest you today for full information.

MEDICAL-DENTAL CREDIT BUREAUS

Charlotte – 212 N. Torrence St.–Phone 7-1529
Greensboro–216 Commerce Pl. – Phone 3-8255
High Point–513 Security Bank Bldg.–Phone 3955
Lumberton – 115 W. Second St. – Phone 3284
Winston-Salem – 624 Nissen Bldg.– Phone 4-8373

North Carolina Members — National Association Medical-Dental Bureaus

GLENWOOD PARK SANITORIUM

Founded by
W. C. ASHWORTH, M. D.
1904

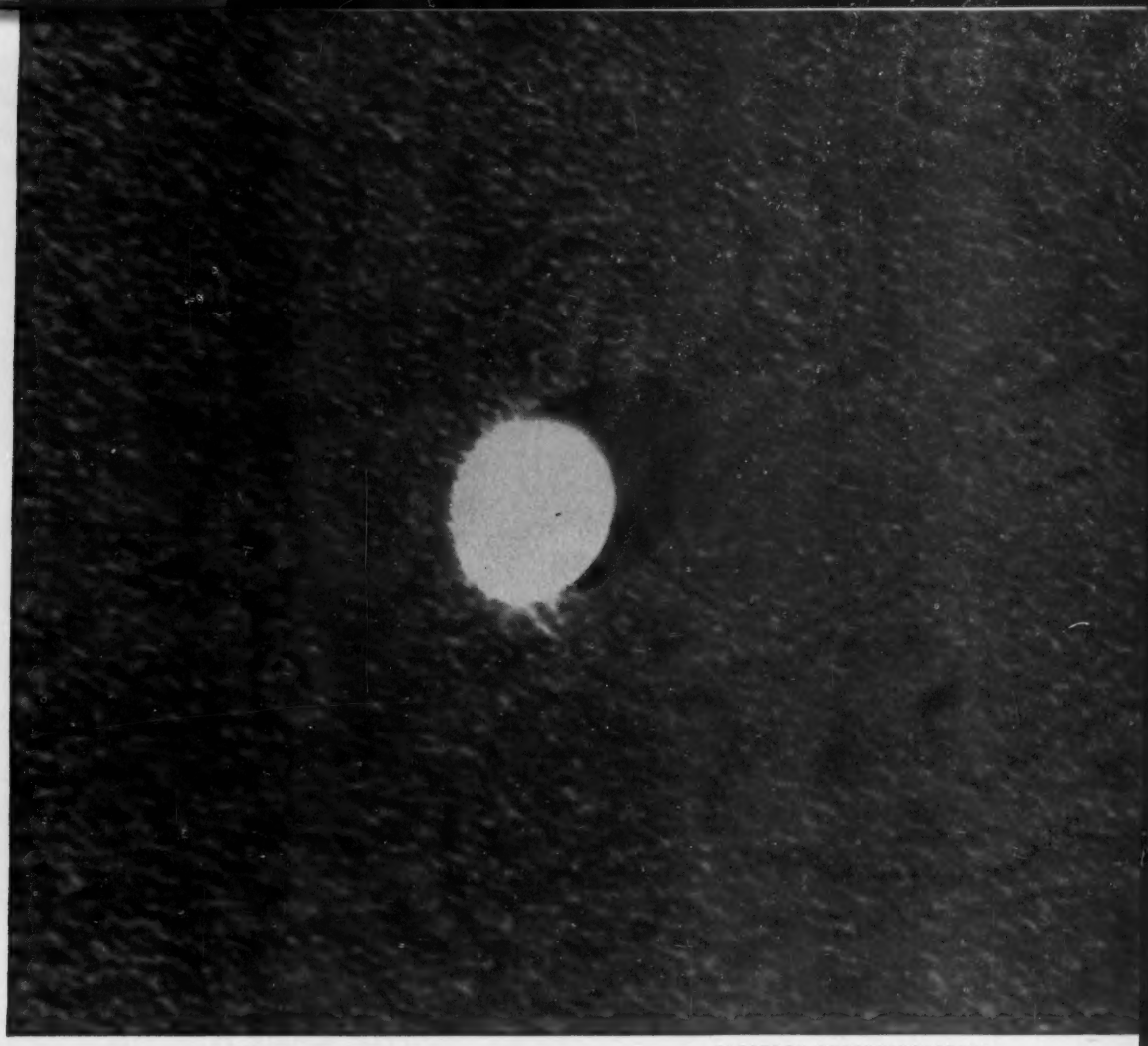
GREENSBORO, North Carolina

Established in 1904 and continuously operated since that date for the medical treatment of drug and alcoholic addictions. Located in an attractive suburb of Greensboro where privacy and pleasant surroundings are to be found.

WORTH WILLIAMS, *Business Manager* R. M. BUIE, JR., *Medical Director*

Address: GLENWOOD PARK SANITORIUM, Greensboro, N. C.

Telephone: 2-0614



ELECTRON PHOTOMICROGRAPH

Staphylococcus aureus 44,000 X

Staphylococcus aureus (Micrococcus pyogenes var. aureus) is a Gram-positive organism commonly involved in a great variety of pathologic conditions, including

pyoderma • abscesses • empyema • otitis • sinusitis • septicemia

bronchopneumonia • bronchiectasis • tracheobronchitis • and food poisoning.

It is another of the more than 30 organisms susceptible to

PANMYCIN*

100 mg. and 250 mg. capsules

Upjohn

*TRADEMARK, REG. U. S. PAT. OFF.

SAINT ALBANS SANATORIUM

RADFORD, VIRGINIA

125-BED PRIVATE PSYCHIATRIC HOSPITAL FOR THE TREATMENT OF NERVOUS AND MENTAL DISORDERS, INCLUDING ALCOHOLISM AND ADDICTION.

James P. King, M.D., Director

James K. Morrow, M.D. Thomas E. Painter, M.D. Daniel D. Chiles, M.D.

James L. Chitwood, M.D., Medical Consultant

Affiliated Clinic Offering Psychiatric and Psychological Evaluation and Therapy:
BLUEFIELD MENTAL HEALTH CENTER
1400 Bland Street
Bluefield, W. Va.
David M. Wayne, M.D., Director

Best Wishes

for a

Happy and Prosperous

New Year

—•—

CAROLINA SURGICAL SUPPLY COMPANY

RALEIGH — DURHAM
NORTH CAROLINA

Sims' Service
is
An Estate Analysis

It minimizes YOUR ESTATE TAXES and INCOME TAXES for your beneficiaries.

Many North Carolina physicians have benefited from Sims' Service.

Your inquiry is invited. Client list (name use has been approved) is available upon request.

CHARLES H. SIMS, C.L.U.
ASSOCIATE GENERAL AGENT
STATE MUTUAL LIFE ASSURANCE CO.
512 SOUTHEASTERN BUILDING
GREENSBORO, N. C.—TELEPHONE 2-1086
Service to Professional Men for Over 20 Years.

NOT ARTHRITIS BUT ARTHRALGIA...

If the patient complaining of aching joints is a woman between 37 and 54 years of age, it is highly possible that she is suffering from arthralgia rather than arthritis.[1] It has been estimated that arthralgia occurs in about 40 per cent of women with estrogen deficiency, and is exceeded in frequency only by symptoms of emotional or vasomotor origin.[2] In fact, arthralgia may be as indicative of declining ovarian function as the classic menopausal hot flushes.

Arthralgia, however, is just one of a vast number of distressing but ill-defined symptoms that may be precipitated by the loss of estrogen as a "metabolic regulator." Other good examples are insomnia, headache, easy fatigability, and tachypnea.

Because these symptoms sometimes occur years before or even long after cessation of menstruation, they are not always readily associated with estrogen deficiency, and the tendency may be to treat them with medications other than estrogen. Obviously, sedatives and other palliatives cannot be expected to produce a satisfactory response if an estrogen deficiency exists. Only estrogen replacement therapy will correct the basic cause of the disorder.

"Premarin" is an excellent preparation for the replacement of body estrogen. In "Premarin" all components of the complete equine estrogen-complex are meticulously preserved in their natural form. "Premarin" produces not only prompt symptomatic relief but a distinctive "sense of well-being" which is most gratifying to the patient.

1. Greenblatt, R. B., and Kupperman, H. S.: M. Clin. North America *30*:576 (May) 1946. 2. McGavack, T. H., in Goldzieher, M. A., and Goldzieher, J. W.: Endocrine Treatment in General Practice, New York, Springer Publishing Company, Inc., 1953, p. 225.

"PREMARIN."®

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

Estrogenic substances (water-soluble) also known as conjugated estrogens (equine)

Available in tablet and liquid form

has no odor . . . imparts no odor

NEW YORK, N. Y. Ayerst MONTREAL, CANADA

TUCKER HOSPITAL, INC.

212 West Franklin Street
Richmond, Virginia

A private hospital accepting for diagnosis and treatment organic neurological conditions, selected psychiatric and alcoholic cases, metabolic disturbances of an endocrine nature, individuals who are having difficulty with their personality adjustments, and children with behavior problems. Patients with general medical disorders admitted for treatment under our staff of visiting physicians.

Under the Professional Charge of

DR. HOWARD R. MASTERS, DR. JAMES ASA SHIELD

AND ASSOCIATES

Catalog on Application

Compliments of

Wachtel's, Inc.

SURGICAL
SUPPLIES

65 Haywood Street
ASHEVILLE, North Carolina
P. O. Box 1716 Telephones 1004-1005

The • • • Thompson Homestead School

FOR EXCEPTIONAL CHILDREN

Year round private home and school for infants, children and adults on pleasant 250 acre farm near Charlottesville.

Write for booklet.

MRS. J. BASCOM THOMPSON, *Principal*

FREE UNION VIRGINIA

This information is reproduced in the interest of good nutrition and health by the Dairy Council units in North Carolina:

High Point-Greensboro
105 Piedmont Building
Greensboro, N. C.

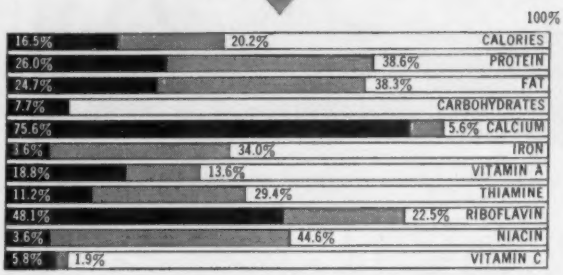
Winston-Salem
106 N. Cherry St.
Winston-Salem, N. C.

Durham-Burlington-Raleigh
310 Health Center Building
Durham, N. C.

CHOLESTEROL

and animal food products

Percent contribution of various nutrients made to U. S. food supply by all animal food products.



FOODS of animal origin (milk, cheese, meat, eggs, etc.) combined with plant foods are needed for optimum nutrition.

About two-thirds of our protein comes from animal foods.[1] Most animal protein has a high biological value, by virtue of its content of essential amino acids. Animal foods are also a source of vitamin B_{12}, a factor necessary for red blood cell regeneration. There is evidence that the presence of animal protein foods in the diet favors normal lipid metabolism.[2]

Four-fifths of our calcium comes from animal foods, chiefly from dairy products. Without dairy foods it is exceedingly difficult to meet the requirements for calcium. Animal foods also supply three-fourths of our available riboflavin, one-half our niacin, and one-third of our thiamine.[1] These and other vitamins are necessary for normal cellular metabolism.

Animal foods contain cholesterol, a lipid which is a normal constituent of all body cells, and which is synthesized by the body from substances derived from protein, fats, and carbohydrates. Disturbed lipid metabolism may result in deposition of cholesterol with fatty acids and protein in the inner walls of the blood vessels. This condition, atherosclerosis, is a forerunner of a number of cardiovascular diseases.[3]

Atherosclerosis is frequently associated with obesity, diabetes, and other metabolic disorders.[3,4] The cause of atherosclerosis has not been determined. Restriction of dietary cholesterol by elimination of animal foods has not been shown to be beneficial in its prevention or cure.[4]

The omission of the valuable nutrients found in these foods constitutes a nutritional risk not justified on the basis of currently available evidence.[5]

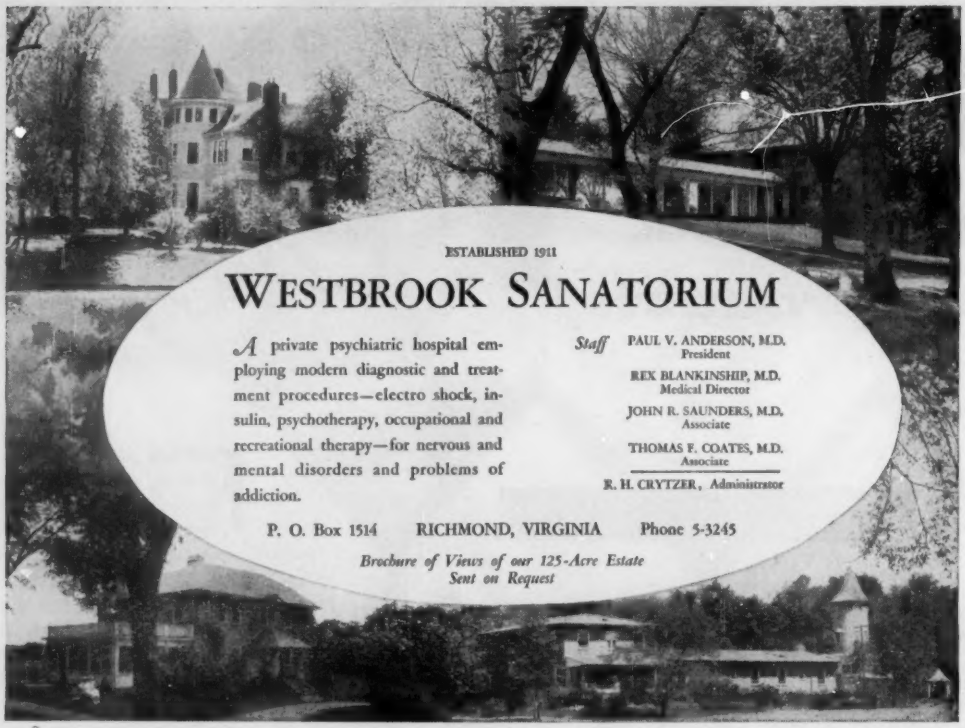
[1]Data supplied by Bureau of Human Nutrition and Home Economics, Agricultural Research Administration, U.S.D.A. (April) 1952.
[2]Okey, R., and Turner, E. Dietary protein as a lipotropic agent for cholesterol. Fed. Proc. *10*:390 (March) 1951.
[3]Gofman, J. W. and Jones, H. B. Obesity, fat metabolism and cardiovascular disease. Circulation *5*:514 (April) 1952.
[4]Keys, A. Human atherosclerosis and the diet. Circulation *5*:115 (Jan.) 1952.
[5]Hegsted, D. M. Further comments on cholesterol. Presented before American Medical Association, Los Angeles, December 1951.

ACCEPTED COUNCIL ON FOODS AND NUTRITION AMERICAN MEDICAL ASSOCIATION

This seal indicates that all nutrition statements in the advertisement have been found acceptable by the Council on Foods and Nutrition of the American Medical Association.

NATIONAL DAIRY COUNCIL
111 NORTH CANAL STREET • CHICAGO 6, ILLINOIS

Since 1915 . . . the National Dairy Council, a non-profit organization, has been devoted to nutrition research and education to extend the use of dairy products.


ESTABLISHED 1911
WESTBROOK SANATORIUM
A private psychiatric hospital employing modern diagnostic and treatment procedures—electro shock, insulin, psychotherapy, occupational and recreational therapy—for nervous and mental disorders and problems of addiction.
Staff
PAUL V. ANDERSON, M.D.
President
REX BLANKINSHIP, M.D.
Medical Director
JOHN R. SAUNDERS, M.D.
Associate
THOMAS F. COATES, M.D.
Associate
R. H. CRYTZER, Administrator
P. O. Box 1514 RICHMOND, VIRGINIA Phone 5-3245
Brochure of Views of our 125-Acre Estate
Sent on Request

For Ready Reference . . . . .

For Convenience . . . . .

For Durability . . . . .

Have your copies of Volume 15, (1954) of the North Carolina Medical Journal bound in a permanent binding for use in your office or home.

Mail your copies of the North Carolina Medical Journal to the Carmichael Printing Company, 118 West Third Street, Winston-Salem, North Carolina, for this service and Volume 15 will be returned to you as an invaluable medical record. $8.50, plus mailing charges.

You are invited to attend the
joint meeting of

THE ATLANTA GRADUATE MEDICAL ASSEMBLY
and
THE SOUTHEASTERN SURGICAL CONGRESS
February 21- 24, 1955
Atlanta Biltmore Hotel
Atlanta, Georgia

Among the speakers to appear on this program are: Dr. Waltman Walters, Mayo Clinic; Dr. George Crile, Jr., Cleveland; Dr. Chevalier L. Jackson, Philadelphia; Dr. Alton Ochsner; Dr. Elmer C. Bartels, Lahey Clinic; Dr. William Dameshek, Boston; Dr. Arthur M. Master, New York; Dr. George T. Pack, New York; Dr. Reid Nesbit, Ann Arbor.

The following symposia will be presented:

"Cancer of the Lung." Moderator: Dr. C. C. Aven. Collaborators: Drs. Burgess Gordon, George Pack, J. A. del Regata.

"Arthritis and Allied Diseases." Moderator: Dr. Vernon E. Powell. Collaborators: Drs. Currier McEwen, Elmer C. Bartels, Edgar S. Gordon.

"Angina Pectoris." Moderator: Dr. Eugene B. Ferris. Collaborators: Drs. Arthur Master, Herrman Blumgart, Robert Wilkins.

"Obstetrics and Gynecology." Moderator: Dr. John B. Cross. Collaborators: Drs. Roger Scott, Willis Brown, Meyer Sak ad.

Note: Registration fee of $10.00 will admit you to all scientific sessions of both Assemblies. We URGE prompt registration and hotel reservation. Write Dr. B. T. Beasley, Secretary, Southeastern Surgical Congress, Hurt Building, Atlanta, or Mrs. S. R. Roberts, Executive Secretary, Atlanta Graduate Medical Assembly, 15 Peachtree Place, N. W., Atlanta.

To keep you posted, Doctor...

on up-to-date techniques for detecting and treating cancer, we have ● ● ●

● ● ● *in our professional film library, films on nearly 150 subjects covering cancer diagnosis, detection and treatment, available on loan* ● ● ●

● ● ● *our monthly publication, "Cancer Current Literature," an index to articles on neoplastic diseases from American and foreign journals.*

For information about these and other materials, write your state Division of the

American Cancer Society

She shot the ashes off the Kaiser's cigaret

Her name was Phoebe Mozee and she was born in Darke County, Ohio, in 1860, and she could shoot the head off a running quail by the time she was twelve years old.

Once, at the invitation of Kaiser Wilhelm II of Germany, she knocked the ashes off a cigaret while he was holding it in his mouth.

When she out-shot the great exhibition marksman, Frank Butler, he fell in love with her and married her and they were ideally happy together for the rest of their long lives.

She could handle a rifle or a six-gun with an artistry unsurpassed by that of any human being before her time or, probably, since. And when she appeared with Sitting Bull and other notables in Colonel Cody's Wild West Show, she thrilled your father and mother —not as Phoebe Anne Oakley Mozee but as "Little Sure Shot," the immortal Annie Oakley.

Annie Oakley, the poor back-country orphan girl who made her way to world-wide fame, was the very spirit of personal independence. That spirit is just as much alive in our generation as it was in hers. It is among the great assets of our people—and our nation. And it is one very great reason why our country's Savings Bonds are perhaps the finest investment in the world today.

Make that investment work for you! Increase your personal independence and your family's security, by buying Bonds regularly—starting now!

* * *

It's actually easy to save money—when you buy United States Series E Savings Bonds through the automatic Payroll Savings Plan where you work! You just sign an application at your pay office; after that your saving is done for you. And the Bonds you receive will pay you interest at the rate of 3% per year, compounded semiannually, for as long as 19 years and 8 months if you wish! Sign up today! Or, if you're self-employed, join the Bond-A-Month Plan at your bank.

For your own security—and your country's, too—

invest in U. S. Savings Bonds!

ELECTRON PHOTOMICROGRAPH

Streptococcus faecalis 40,000 X

Streptococcus faecalis is a Gram-positive organism commonly involved in a variety of pathologic conditions, including urinary tract infections • subacute bacterial endocarditis • peritonitis.

It is another of the more than 30 organisms susceptible to

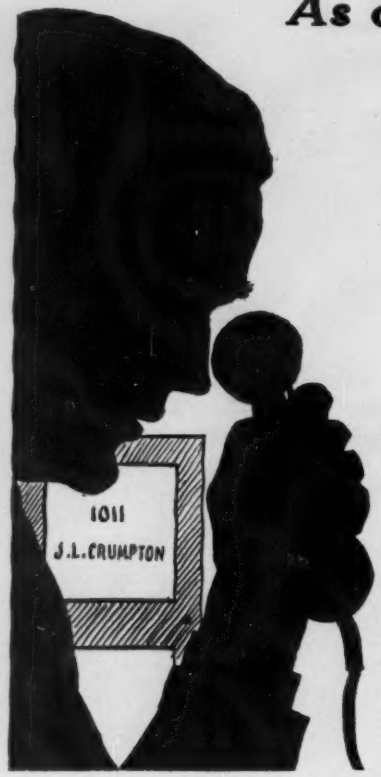
PANMYCIN*

100 mg. and 250 mg. capsules

Upjohn

*TRADEMARK, REG. U. S. PAT. OFF.

TO MEMBERS OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA



As close as your phone . . .

TELEPHONE COLLECT
5-5341 — DURHAM

If you have any problems in connection with disability insurance we invite you to call this office—collect. We'll do our best to help you — and there's no obligation on your part.

THIS IS THE ACCIDENT AND HEALTH PLAN ESTABLISHED BY THE STATE SOCIETY FOR ITS MEMBERS IN 1940

PLANS AVAILABLE

Accidental Death	*Dismemberment Benefits, Up to*	*Accident and Sickness Benefits*	*Annual Premium*	*Semi-Annual Premium*
$5,000.00	$10,000.00	$ 50.00 weekly	$ 90.00	$45.50
5,000.00	15,000.00	75.00 weekly	131.00	66.00
5,000.00	20,000.00	100.00 weekly ($433.00 per month)	175.00	86.50

Members under age 60 may apply for $10.00 per day extra for hospitalization at premium of only $20.00 annually, or $10.00 semi-annually.

FOR APPLICATION, OR FURTHER INFORMATION, WRITE OR CALL

J. L. CRUMPTON, State Mgr.

Professional Group Disability Division

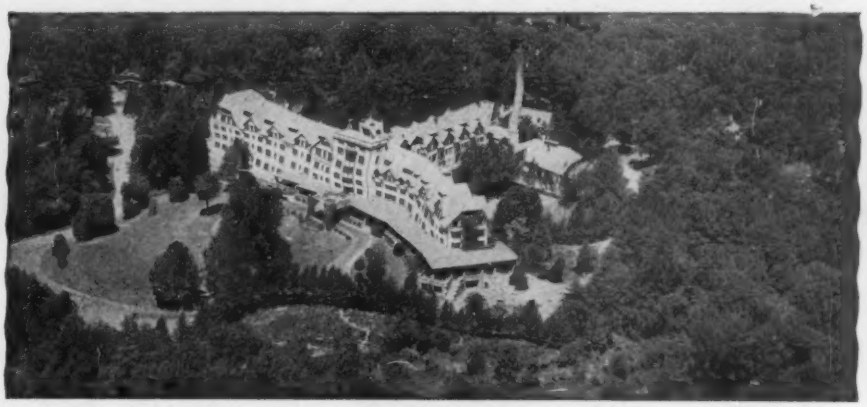
Box 147, Durham, N. C.

Representing—COMMERCIAL INSURANCE COMPANY OF NEWARK, N. J.

APPALACHIAN HALL

ESTABLISHED — 1916

ASHEVILLE **NORTH CAROLINA**



An Institution for the diagnosis and treatment of Psychiatric and Neurological illnesses, rest, convalescence, drug and alcohol habituation.

Insulin Coma, Electroshock and Psychotherapy are employed. The Institution is equipped with complete laboratory facilities including electroencephalography and X-ray.

Appalachian Hall is located in Asheville, North Carolina, a resort town, which justly claims an all around climate for health and comfort. There are ample facilities for classification of patients, rooms single or en suite.

WM. RAY GRIFFIN, SR., M.D. *Diplomate in Psychiatry*

MARK A. GRIFFIN, SR., M.D. *Diplomate in Psychiatry*

WM. RAY GRIFFIN, JR., M.D.
MARK A. GRIFFIN, JR., M.D.

For rates and further information write APPALACHIAN HALL, ASHEVILLE, N. C.

INDEX TO ADVERTISERS

Abbott Laboratories ..... X & XI
American Meat Institute XVIII
Appalachian Hall XLIII
Atlanta Graduate Medical Assembly XXXIX
Audivox, Inc. ..... XVI & XVII
Ayerst Laboratories XXXV
The Bayer Company XII
Brawner's Sanitarium XXIV
Broadoaks Sanatorium XXVI
Brown & Williamson Tobacco Company VI
Carolina Surgical Supply Company XXXIV
Coca-Cola Co. XXIV
J. L. Crumpton XLII
Davies, Rose & Co. XVI
Glenwood Park Sanitarium XXXII
Highland Hospital XXVIII
Hospital Saving Assn. of N. C. III
Jaguar Cars, North American Corporation XXVII
Keeley Institute XXXI
Lake Side Laboratories ..... 2nd Cover
Lederle Laboratories ..... IV & V
Eli Lilly and Company ..... XXII & Front Cover
P. Lorillard Co. (Old Gold Cigarettes) XXI
Mead Johnson & Company ..... 4th Cover
Medical Dental Credit Bureau XXXII
Monarch Elevator & Machine Co. XXVIII
National Dairy Council of N. C. XXXVII
Parke, Davis & Company ..... XLIV & 3rd Cover
Chas. Pfizer & Co., Inc. ..... XIV & XV
Physicians Casualty Association
Physicians Health Association XXX
Pinebluff Sanitarium I
Saint Albans Sanatorium XXXIV
G. D. Searle & Company XXIII
State Mutual Life Assurance Company XXXIV
E. R. Squibb & Sons,
Div. of Mathieson Chem. Corp. XXIX
Stuart Circle Hospital XXVI
Thompson Homestead School XXXVI
Tucker Hospital XXXVI
Upjohn Co. ..... VII, XIII, XIX, XXV, XXXIII & XLI
U. S. Government Bonds XL
Valentine Co. XXX
Wachtel's, Inc. XXXVI
Westbrook Sanatorium XXXVIII
Whitaker Laboratories XXVIII
White Cross Hospital XX
Winchester Surgical Supply Company
Winchester-Ritch Surgical Company I
Winthrop-Stearns, Inc. IX

for the epileptic.

Modern diagnostic methods and effective anticonvulsants now help the patient with epilepsy enjoy greater freedom from seizures. And with a more understanding society, greater independence is assured.

DILANTIN® SODIUM (diphenylhydantoin sodium, Parke-Davis)

an established anticonvulsant of choice, alone or in combination, for control of grand mal and psychomotor seizures -- without the handicap of somnolence.

DILANTIN Sodium is supplied in a variety of forms -- including Kapseals® of 0.03 Gm. (½ gr.) and 0.1 Gm. (1½ gr.) in bottles of 100 and 1,000.

. greater independence

Parke, Davis & Company
DETROIT, MICHIGAN

Provides a protein margin of safety

- **for greater nitrogen retention**
- **for firmer muscle mass**

LIQUID

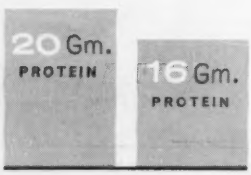
POWDERED

LACTUM

NUTRITIONALLY SOUND FORMULA FOR INFANTS

In the bottle-fed infant, a higher protein intake, with greater nitrogen retention, results in firmer muscle mass, better tissue turgor and better motor development.[1] A protein intake that does not maintain positive nitrogen balance "cannot be considered optimal or even safe for any length of time."[2]

During the first year of life, the infant's nourishment is derived primarily from his formula. Hence it is especially important that the formula be generous in protein. The usual Lactum® feedings provide 2 Gm. protein per pound of body weight—25% more than the Recommended Daily Allowance of 1.6 Gm. per pound (3.5 Gm. per kilogram).



Lactum formula for a 10 lb. infant

Recommended Daily Allowance for a 10 lb. infant

1. Jeans, P. C., in A.M.A. Handbook of Nutrition, Philadelphia, Blakiston, 1951, pp. 275-298. 2. Stare, F. J., and Davidson, C. S., in The Proteins, American Medical Association, 1945.

MEAD JOHNSON & COMPANY • EVANSVILLE, INDIANA, U.S.A.

MEAD